

GOVERNMENT OF INDIA

MINISTRY OF RAILWAYS

(RAILWAY BOARD)

Report by the Railway Board

ON

INDIAN RAILWAYS

FOR

1948-9

Volume I

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PRINCIPAL STATISTICS OF RAILWAY OPERATIONS DURING 1947-8 and 1948-9

I.—ALL INDIAN RAILWAYS

Items	Classes I, II and III (including E. P. and Assam Railways and N. G. of E. I. Railway)			Indian Government Railways (including E. P. and Assam Railways and N. G. of E. I. Railway)		
	1947-8	1948-9		1947-8	1948-9	
Gross earnings (crores) Rs	183 69	233 83		166 23	214·77	
Total Working expenses (crores) Rs	*163 94	183 88		151 93	169 63	
Operating ratio . per cent	*89 25	78 64		91 40	78 98	
Number of passengers originating (millions)	*1,043 95	1,180 60		929 08	1,061·35	
Passenger miles . (millions)	*33,649 09	38,764 99		30,086 47	35,128 66	
Earnings from carriage of passengers (crores) Rs	*73 27	92·91		65 10	83 91	
Average earnings per passenger mile. Pies	4 18	4 60		4 15	4 59	
Freight tons originating (millions)	73 46	82·58		65 68	74 42	
Freight ton miles (millions)	*20,399 26	22,743 16		19,250·99	21,639 83	
Earnings from carriage of goods. (crores) Rs.	*86 34	112·26		79 18	104 18	
Average earnings per freight ton mile. Pies	8 13	9 47		7 90	9 24	
Total train miles (millions)	157 01	167 61		139 68	150·10	
Gross earnings per train mile Rs.	11 70	13 96		11 90	14 31	
Working expenses per train mile Rs	*10 44	10 97		10 88	11·30	
Net earnings per train mile. Rs.	*1 26	2 99		1 02	3·01	
Net earnings per mean mile worked. Rs.	7,989	14,615		5,440	16,933	

* Revised figures.

II.—INDIAN GOVERNMENT RAILWAYS

(The figures include statistics of worked lines of Indian Government railways but exclude Indian Government portions worked by the Jodhpur and His Exalted Highness the Nizam's State Railways and E. P. and Assam Railways and N.G. of E. I. Railway.)

Items	1938-9 (Pre-war)	1939-40	1944-5	1945-6	1946-7	1947-8	1948-9	
Gross earnings (crores) Rs.	73 98	77 63	152 38	160 40	149 45	157 42	197·52	
Total Working expenses. (crores) Rs.	47 49	48·04	99 93	108 10	117 88	142 92	152 78	
Operating ratio . Per cent.	64 19	61 88	65 58	67 39	78 88	90 79	77·35	
Number of passengers originating. (millions)	355 26	349·05	597·02	675 39	752 03	902 26	974 93	
Passenger miles . (millions)	12,588 13	12,321 12	24,917 30	27,518 55	27,910·13	29,012 57	31,840·91	
Earnings from carriage of passengers. (crores) Rs	20 41	20 10	49 82	56 45	57 46	62 23	75·33	
Average earnings per passenger mile. Pies	3 11	3 13	3 84	3·94	3·95	4 12	4 54	
Freight tons originating. (millions)	64 91	68 87	69 29	70 72	67 23	63 90	69 76	
Freight ton miles (millions)	17,056 49	18,381 46	21,175 36	21,975 45	20,688 95	18,962 55	20,714 50	
Earnings from carriage of goods. (crores) Rs.	48 52	52 16	77 21	78 81	72,65	75 34	87 92	
Average earnings per freight ton mile Pies	5 46	5 45	7·00	6 89	6 74	7 63	9 08	
Total train miles (millions)	135·38	137 45	119·00	127·63	134 29	134 70	137 91	
Gross earnings per train mile Rs.	5 46	5 65	12 81	12 57	11 13	11 69	14 32	
Working expenses per train mile. Rs.	3 51	3 50	8 40	8 47	8 78	10·61	11·08	
Net earnings per train mile. Rs.	1·96	2·15	4 41	4 10	2 35	1·08	3 24	
Net earnings per mean mile worked. Rs.	11,212	12,550	23,030	22,947	13,831	6,250	19,025	

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CHAPTER I

GENERAL

1. General features of the year.—The year under review was the first complete year of working for Indian Railways after the Partition. The conditions which prevailed towards the close of the previous fiscal year contained certain elements of uncertainty resulting from the post partition economic readjustments, and these delayed the complete solution of the transitional problems left over by the war. These adjustments abated gradually and stability was progressively attained in 1948-9 with increased industrial activity. There was also a steady recovery in railway operational efficiency. The principal features of 1948-9 from the point of view of Indian Railways were the maintenance of high levels of traffic, upward trends in earnings, and the reduction of transport shortages.

Railways operations are only a reflex of the general economic activity of the country. The year from this point of view proved on the whole satisfactory. Although the agricultural situation during 1948-9 recorded a slight decline in both area and yield under major crops, this was offset by the rise in industrial production, resulting in increased output in most industries. Only coal and steel, among the major industries, recorded a decrease. But in spite of a reduction in raisings, coal despatches during the year substantially exceeded the total for 1947-8. Foreign trade also recorded gains. The physical volume of imports, expressed as a percentage of the pre-war level of 1938, touched 96.3 in 1948 against 82.2 in the previous year.

The volume of exports stated in the same percentage relation to the pre-war year increased from 66.2 to 67.7 in 1948. Perhaps the most satisfactory feature of the year was the improvement in the general labour situation in the country. The number of industrial disputes as compared with the previous year declined by 30 per cent, while the working days lost to industry were reduced by more than 50 per cent.

These economic developments were mainly responsible for the improved results of working during 1948-9. New records have been established under a number of items—the number of passengers, passenger miles, passenger earnings, and goods earnings—and accounted for the more satisfactory financial results of the year. There was a reassuring drop in the operating ratio of the Indian Government Railways from 91.40 to 78.98 during 1948-9. These achievements were made possible principally because of the sustained efforts on the part of the Railways to attain greater efficiency in operation and consequently increased ability to handle the additional traffic. This is shown by the wagon loadings which, during the closing months of the year, showed a steady curve of increase. Complaints of bottlenecks in transport became infrequent in sharp contrast to those at the beginning of the year.

The main features of railway operation as reflected in the statistics of the year are briefly referred to in the general review of working in the succeeding paragraphs.

2. General review of working.—As compared with 1947-8, there was during 1948-9, a general increase in the traffic handled, both passenger and goods. Excluding the figures of the Assam and Eastern Punjab Railways for proper comparison, the earnings from passengers on all Indian Railways increased by 19.8 per cent and the earnings from goods traffic by 28.5 per cent. The increase in earnings was due partly to the additional traffic handled and partly to the effect of changes in rates and fares

The volume of goods traffic during the year on Class I Railways, excluding the Eastern Punjab and Assam, stated in terms of net ton miles, showed an increase of 9·1 per cent over the preceding year. As compared with 1938-9, however, there was an increase of 21·5 per cent. An analysis of the movements during the year shows the composition of goods to be 43·6 per cent under coal, 10·9 per cent under foodgrains and pulses, 2·5 per cent under oilseeds and 43 per cent under 'other commodities'. In 1947-8, coal accounted for 45·9 per cent, foodgrains, pulses and oilseeds combined for 11·7 per cent and other commodities for 42·4 per cent. Thus, the change in the composition of the traffic from the lowest-rated group, coal, to the commodities included in the other two higher-rated groups, together with the effects of the revision of goods rates structure, has helped to increase the average amount earned per ton per mile from 7·71 pies in 1947-8 to 9·18 pies in 1948-9.

Turning to the operating aspect, Indian Railways during the year have on the whole done better than they did in 1947-8. Taking the Class I Railways (excluding the Bengal Assam, North Western, Assam, Eastern Punjab, and East Indian, narrow gauge), the performance during 1948-9, shows improvement under several factors of working.

The train mileage run during 1948-9 records an increase of 2·27 million or 1·69 per cent over the previous year, touching almost the figure for 1938-9. The train mileage on goods services exceeded the pre-war level by 3·73 per cent. Though the passenger train mileage was still short of it by 2·84 per cent, it should be stated that it has been possible to add 2,235,000 train miles for passenger services during the year under review.

During the year, there has been an appreciable improvement in the punctuality of passenger trains. Another important development affecting passenger service was the introduction of new classes of passenger transportation with effect from 1 January 1949, referred to in detail in Chapter IV of this volume.

As regards goods services, greater efficiency in performance is shown under several operating averages. As compared with 1947-8, the net freight carried per goods train increased by 47 tons or by 11 per cent on the broad gauge. The transportation affected by wagons per day, as shown by the net ton mileage per wagon day, was 6·3 per cent higher on the broad gauge and 10·5 per cent higher on the metre gauge.

The average number of engines in use daily during 1948-9 rose by 4 per cent on the broad gauge and by 5 per cent on the metre gauge as compared with 1947-8. The work performed by locomotives also reflects a general improvement. The percentages of broad gauge engines under or awaiting repairs showed a slight increase from 20·2 to 20·8, but on the metre *gauge, there has been a decrease from 19·9 to 17·9.*

3. Railways and the Legislature.—The Railway Budget for 1949-50 as approved by the Standing Finance Committee for Railways was presented to the Constituent Assembly (Legislative) on 15 February 1949. The General Discussion on the budget proposals took place in the House on 18 and 21 February 1949. The vote on the demands for grants was taken on 22 and 23 February 1949.

The discussion covered a variety of subjects. The more important of these related to the revised [illegible] ced from *1 January 1949, need for* [illegible] n trains, booking of accommodation [illegible] reserved for long-distance passengers, provision of increased amenities for Class III passengers, establishment of a coach-building factory, efficiency of railway

6. Local Railway Advisory Committees.—Meetings of the Local Advisory Committees totalled 55 during 1948-9 as compared with 58 during the previous year. The members of these Committees were kept fully informed of all important problems affecting passenger travel. Their recommendations were given the fullest consideration, and action was taken on them as far as possible

The subjects discussed at the meetings of the Local Advisory Committee covered a wide range of important items of public interest. A good many of these pertained to the needs of the travelling public Among the subjects of general interest discussed at these meetings, the following may be mentioned :—

(*a*) time tables and train services;

(*b*) ticketless travel,

(*c*) catering—periodical revision of charges and inspection by railway doctors of foodstuffs offered for sale to the travelling public,

(*d*) lighting arrangements in trains and at stations,

(*e*) opening of train halts, booking windows and city booking offices;

(*f*) amenities for Class III passengers,

(*g*) reservation of accommodation,

(*h*) safety of passengers during night journeys,

(*i*) arrangements for supply of drinking water to railway passengers,

(*j*) allotment of priority and supply of wagons,

(*k*) sale of literature at railway bookstalls,

(*l*) provision of 'vestibuled coaching stock' on trains,

(*m*) post-war reconstruction programme, and

(*n*) claims for compensation.

7. Amenities for the public.—The steps taken during the year towards making rail travel more comfortable are referred to in greater detail in Chapter VIII.

Overcrowding persisted, although in a somewhat less acute form, and [illegible] with the object of removing some [illegible] journeys of 300 miles or over [illegible] metre gauge —

(*a*) additional booking office windows were opened for the issue of tickets to long distance passengers and to passengers travelling to out-of-the-way places only;

(*b*) at important starting stations complete Class III bogies were set apart in each long distance mail or express train, exclusively for the use of long distance passengers, and

(*c*) special travelling ticket examiners were appointed to travel in the carriages set apart for long distance passengers, the object being to prevent short distance passengers from entering into these carriages either at starting stations or *en route*

From all indications, these arrangements appear to have been well received by the public

The total number of staff of all grades (gazetted and non-gazetted) employed on the open lines of Indian Government Railways, including Assam and Eastern Punjab Railways, increased from 825,031 on 31 March 1948 to 838,412 on 31 March 1949. The total number of staff of all grades (gazetted and non-gazetted) employed on constructions decreased from 4,115 to 1,326 The total cost of the staff, was Rs. 78,36,71,871 an increase of Rs. 15,32,42,308 over the figure for the preceding year. The increase in the number and/or cost, as the case may be, of staff reflects mainly the effects of the implementation of the recommendations of the Central Pay Commission with retrospective effect, the setting up of organizations on railways for implementing the Adjudicator's Award, the payment, as a result of the recommendations of the Railway Grainshops Enquiry Committee, of more dearness allowance and certain lump sum amounts in lieu of grainshop concessions to staff who elected for the full dearness allowance in cash, and the increase in the rates of dearness allowance.

At the close of the year, there were in all 589 grainshops, of which 448 were static and 141 mobile. The number of ration card holders who purchased foodstuffs, etc , at these shops at the close of the year was 613,000, of which 413,000 were at concessional rates and 200,000 at controlled rates. The loss incurred in affording relief in kind to the staff was approximately Rs. 25 8 crores This is equivalent to an average relief of about Rs. 21 3 per ration card holder during March 1949 as against Rs. 22 4 during the previous year.

The number of canteens providing light refreshments to workers and, in some cases, cooked meals increased from 26 to 52 in the year under report and the number of staff who patronized these canteens was on an average of 53,000 per day.

The rates of dearness allowance admissible to staff drawing basic pay of Rs 250 and below were increased by Rs. 10 per mensem, in the case of staff who elected for the full dearness allowance in cash, while, in the case of Railway staff availing themselves of the grainshop concessions, an increase of Rs 5 per mensem in the rates of dearness allowance was sanctioned, the increased rates taking effect in both cases from 1 January 1949

9. Security measures on Railways.—In 1948 there were about 5,100 all ranks in the Railway Protection Police on the Eastern Punjab, East Indian, Oudh Tirhut, Bengal Nagpur, Assam, Great Indian Peninsula, and Bombay, Baroda and Central India Railways. At the suggestion of the Bombay, Baroda and Central India Railway, and with the concurrence of the Government of the United Provinces, the Railway Protection Police force in the United Provinces' portion of that railway was disbanded in May 1948 By 1949, there were thus about 4,800 all ranks in this force on the remaining six railways mentioned above.

Railways continued to give full attention to the fitting of security devices in compartments and to the maintenance of such devices in good working order

10. Publicity and Public Relations.—The Public Relations Branch maintained close contacts with other Departments of the Central Government, with the press, and the trading community Press communiqués were issued from time to time, regarding the decisions of the Government on important railway matters of interest to the public Public reactions on the problems and activities of railways were carefully studied While legitimate and constructive criticism was passed on to the Directorates concerned for remedial action, uninformed or unfair criticism was contradicted or otherwise suitably dealt with.

A conference of the Public Relations Officers was held from 31 December 1948 to 4 January 1949 in Calcutta in order to co-ordinate the efforts of Administrations in building up the goodwill of the public for the Railways The conference discussed the outlines of a country-wide publicity campaign, which was later launched on all the Government Railways in February 1949

Assam Railway.—As a result of heavy storms during April 1948 and February-March 1949, a record rise in the Brahmaputra and heavy rainfall, some of the buildings, bridges and track, etc., on the Assam Railway, suffered considerable damage. The more important items to which reference may be made are staff quarters on the Sapatgram section and at Amingaon, Badarpur and Lumding stations, some bridges on the Golakganj-Amingaon, Tangla-Harisinga, Rowta Bagan-Majbat and Chaparmukh-Silghat sections, and major slips and bank subsidences, etc., on the Badarpur-Lumding and Rangiya-Rangapara sections. Communication remained interrupted on certain sections for varying periods, in some cases for as long as 10 to 19 days. Transhipment was arranged wherever practicable The total cost of repairing the damages amounted to about Rs. 3,58,000

Bombay, Baroda and Central India Railway A cyclone of very severe intensity struck the city of Bombay and its suburbs on 21 November 1948, causing extensive damage to tele-communications, power distribution wires, signals, railway lines, bridges, and staff and service buildings in and around Bombay. Traffic between Churchgate and Bulsar remained interrupted for two days in consequence The approximate cost of repairs was Rs 3,29 000

On the metre gauge section, in consequence of the line having been washed away in a number of places in July 1948, on the Khandwa Chitorgarh section, and in October on the Bhatinda-Fazilka section owing to a breach in the Fazilka Distributory, communication was interrupted for a day and a half in each case. The approximate cost of repairs was about Rs 10,600

East Indian Railway.—On the East Indian Railway as a result of the rise of water level in the neighbouring rivers, breaches occurred between Krishnapur and Lalgola Ghat, and on the Tarighat Branch, resulting in the suspension of traffic for 19 and 26 days respectively during September-October 1948. Floods in the Ganga at Kashi during September 1948 damaged pier No 3 of the Malaviya Bridge, and it is proposed to have the pier repitched at an estimated cost of about Rs 8 lakhs On account of heavy rains in September, the bank between Banaras and Bechupur settled down at several places. On the Lhaksar-Dehra Dun section breaches occurred at 11 places between Hardwar and Diowala stations on 5 August 1948, and traffic remained interrupted for three days A bridge on the Moradabad Chandausi Branch was heavily scoured by floods On 24 August 1948, a bridge on the Raja-ka Sahaspur-Sambal Hatim Sarai Branch was severely damaged It was restored as a semi-permanent measure at a cost of about Rs 1,33,000 and through communication was resumed on 11 May 1949 The total cost of repairing the damages, including the figures separately given above in two cases, amounted to Rs 10,62,000 approximately A severe cyclone accompanied by heavy rain visited Tundla and its neighbouring stations on 23 May 1948 damaging the lines of communications, telegraph and signal posts, etc , and resulting in detention to trains up to a maximum of five hours at Tundla The total cost of the repairs amounted to about Rs 15 000

Eastern Punjab Railway —A part of the tunnel between Sonwara and Jabli stations on the Kalka-Simla section collapsed on 16 August 1948 owing to heavy rainfall Communication remained interrupted for eight days from 22 August 1948. On the Jullunder City-Mukerian section, the track between Dasuya and Mukerian stations breached on 1 August 1948 in three places by heavy rain Through communication was interrupted for eight days The approximate cost of repairing the tunnel and the breach as well as of repairing other minor breaches on the Khurdpur-Sham Chaurasi Nasrala sections amounted to Rs 1,15,000

Great Indian Peninsula Railway.—As a result of the cyclone on 21 November 1948 referred to earlier, power failure on the Great Indian Peninsula Railway, brought the suburban service to a standstill for varying periods on the different sections during 22 to 24 November 1948. Other traffic was also interrupted between Igatpuri and Khervadi on the North East line, and between Bombay and Kalyan, and Kalyan and Vangani, on the South East line The track subsided between Talegaon and Dehu Road and at Kirkee The approximate cost of repairs amounted to Rs. 1,75,000

The total quantity of jute released at the Calcutta Area stations, *viz.*, Kalighat, Chitpur, Ballygunge, Kidderpore Docks, Ultadanga, Cossipore Road during 1948-9 showed a gradual decline in volume, as shown by the following figures.

July to March	Maunds
1946-7	9,852,304
1947-8	6,783,567
1948-9	6,432,423

Oudh Tirhut Railway.—No special arrangements had to be made except the provision of through trains between Manihari Ghat and Naksalbari, and Manihari Ghat and Malda Court

Jodhpur Railway.—Through train service between the Dominions of India and Pakistan terminated abruptly on 27 July 1948 with 10 Down at Khokhropar and 9 Up at Munabao. Since then through communication has been under suspension and booking restricted beyond Munabao, the last border station on the Indian side. Thus both passenger and goods traffic between the two Dominions is at a standstill, except that some traffic in passengers and cotton seeds and cement moves between Munabao and Khokhropar by road Traffic so brought to Munabao is booked to destinations in India

16. Implementation of decision for division of rolling-stock.—The reconstituted Stores Sub-Committee (Railways), consisting of representatives of [illegible] for the purpose of finalizing the [illegible] ordance with the Radcliffe Av[illegible] lers, carriages wagons and ferry stock to be received by India and Pakistan respectively out of the old Bengal Assam and North Western Railways stock was decided at these meetings. Balancing Committees were set up to work out the individual numbers of the stock by equitable age groups. Decision was also taken in the matter of division of rolling-stock on order as well as under construction on 15 August 1947. There were, however, one or two points over which no agreement could be reached and these were left over for further discussion at a meeting of the Committee to be held in May 1949 By 31 March 1949 considerable progress had been made on the Eastern Punjab and North Western, and the East Indian, Assam and Eastern Bengal Railways in the matter of implementing the agreed decisions of the Departmental Sub Committee

17. Effect of partition—absorption of India-opted staff of the old Bengal Assam and North Western Railways.—On the partition of India, about 60,000 India-opting employees of the old Bengal Assam and North Western Railways had to be found postings on Indian Government Railways Because of the disturbances, the transfers could not be carried out in an orderly manner and the staff had to come away *en masse* from Pakistan areas The staff were distributed on Indian Government Railways as follows :—

Railway	No of employees
(1) Eastern Punjab	14,510
(2) Bombay, Baroda and Central India	2,815
(3) Great Indian Penisula	1,638
(4) East Indian	17,017
(5) Assam	18,170
(6) Bengal Nagpur	3,557
(7) Oudh Tirhut	2,165
(8) Madras and Southern Mahratta	17
(9) South Indian	11
TOTAL	59,900

An advance of two months' pay had been sanctioned to the staff to enable them to carry out the transfer. But because of the disturbances, a good number of them had to leave all their belongings in Pakistan In order to enable them to tide over their immediate difficulties, a rehabilitation advance was sanctioned equal to three months' pay and returnable in 36 instalments.

The large-scale transfer of staff raised a number of problems on Indian Government Railways. The staff had to be fitted into appropriate positions *vis-a-vis* those of the existing staff of the Railways, *and this problem was complicated by the fact that the grades on all the Railways were not uniform.* As there were a large number of India-opting staff and the vacancies caused by the departure of Pakistan-opting staff were not enough to accommodate them, it was decided to absorb the staff in their substantive grades, reverting, if necessary, any existing staff of the Railways who had been officiating in these posts. Their claims for officiating in higher grades were required to be considered along with those of the existing staff of the Railways. For this purpose, combined seniority lists had to be drawn up and instructions were issued to this effect in August 1948.

Another difficult problem was that of obtaining the service records and provident fund accounts of the staff who came from Pakistan. As it was anticipated that there might be considerable delay in seeking out and forwarding all the records, instructions were issued early in 1948 for reconstructing the service records on certain *ad hoc* formulæ, supplemented by affidavits furnished by the staff. This procedure could not, however, be adopted in the case of provident fund accounts. Meanwhile, a number of such staff had retired or were due for retirement, and were anxious to obtain their provident fund money. Special arrangements were made in the last quarter of 1948 for the quick transfer of their accounts, and, by the beginning of 1949, almost all accounts had been received. The rate of transfer of service records has not, however, been equally satisfactory, and even now about 14,000 records are outstanding.

18. Change in open miles owing to partition—handing over of Jodhpur-Hyderabad section to Pakistan.—Partition of the country into the Dominions of India and Pakistan affected only three railway systems, *viz.*, North Western, Bengal Assam, and Jodhpur Railways. The North Western Railway had a mileage of 6,881¼ before partition, of which 1,855¼ miles fell within the Indian Dominion and 5,026 miles in Pakistan. Of the 3,555 miles of the Bengal Assam Railway, 352 miles of B. G., 17 miles of N. G. and 1,573 miles of M. G. fell within India and 1,613 miles in Pakistan. The Sind section of the Jodhpur-Hyderabad Railway, a length of 319 miles of M. G. fell entirely within Pakistan.

19. Loss of man-days as a result of strikes.—The total number of man-days lost as a result of strikes in workshops, running sheds and other similar establishments on Indian Government Railways during 1948-9 was approximately 0·2 per cent of the total number of man-days worked. The number of man-days worked during the year totalled 121,789,498 and the man-days lost owing to strikes amounted to 220,103.

The details of the total number of man-days worked during the year and the number of man-days lost by railways in consequence of strikes are summarized in the following table.

NUMBER OF MAN-DAYS WORKED AND LOST THROUGH STRIKES DURING 1948-9

Railways	No. of man-days worked	No. of man-days lost owing to	
		Legal strikes	Illegal strikes
Assam	8,024,473	*Nil.*	38,366
Bengal Nagpur	5,838,000	"	57,097
Bombay, Baroda & Central India	7,974,818	8	7,971
East Indian	55,098,698	*Nil.*	13,011
Eastern Punjab	14,669,110	"	100
Great Indian Peninsula	13,670,549	4,785	42,220
Madras & Southern Mahratta	6,211,188	*Nil.*	3,146
Oudh Tirhut	6,162,393	"	8,613
South Indian	4,140,269	"	44,786
TOTAL	121,789,498	4,793	215,310

CHAPTER II

FINANCIAL RESULTS

20. Monsoon Conditions and Agricultural Situation, 1948-9.—Before proceeding to examine the financial results of Indian Railways for 1948-9, a reference may be made to two important factors affecting the volume of traffic handled, namely, the agricultural situation and the foreign seaborne trade during the year.

Although the south-west monsoon started during the year a little later than usual, the country as a whole received satisfactory rains during the monsoon period. The only exceptions were the United Provinces and Gujarat, the former having excessive rains, and the latter a complete drought. Rainfall was normal afterwards, except in November when many parts of the country, especially parts of Assam, West Bengal, Orissa, Chota Nagpur and the Deccan, had untimely rains. Taking the year as a whole, rainfall was in excess of the normal in the United Provinces and south Hyderabad. It was deficient in Gujarat and west Rajputana. In all other parts of the country†, it was normal.

Final forecast figures of area and yield for all the crops for 1948-9 are not yet available, but the data so far published point to a general decline in both the area under, and the yield of, the principal crops. The decline is more pronounced in the case of commercial crops like cotton, sugarcane, sesamum and linseed. The main reasons for the decrease have been excessive rains and floods in the United Provinces, complete drought in Gujarat and Saurashtra, and unfavourable weather conditions at the time of sowing in the Central Provinces and Berar, Hyderabad and Madras. An appreciable increase in acreage has been recorded under gram, reflecting the effects of prevailing high prices in the Central Provinces and Berar, favourable weather conditions in the Central Provinces and East Punjab, and progress in rehabilitation of refugees in Patiala and East Punjab States Union. There was a significant increase in the acreage and yield of jute owing to favourable weather conditions at sowing time in Assam, Bihar and West Bengal, and the cultivation of 66,420 acres of waste and other lands on which no crop was grown in the jute season during the previous three years.

According to the information available, the percentage variations in the acreage and yield under the principal crops, as compared with the previous year, are as shown in the following table.

VARIATIONS IN ACREAGE AND YIELD OF PRINCIPAL CROPS

(Increase or decrease per cent in 1948-9 over 1947-8)

Crop*	Acreage	Yield
Rice (final)	− 0.6	3.7
Wheat (second)	− 5.0	
Ragi (first)	− 5.8	
Gram (first)	+ 7.9	
Jowar (second)	− 3.4	20.0
Bajra (first)	− 6.7	
Maize (first)	− 0.5	
Barley (first)	+ 2.8	
Sugarcane (final)	− 9.9	14.1
Sesamum (supplementary)	− 10.4	10.0
Castor seed (final)	− 0.6	7.6
Groundnut (final)	− 9.9	− 9.9
Rape and mustard (second)	− 3.8	.
Linseed (second)	+ 0.8	.
Cotton (fourth)	+ 2.6	− 17.8
Jute (final)	+ 11.75	+ 11.95

* The character of the forecast is indicated within brackets.

† Data for Kashmir are not available.

21. Trade Review.—The improvement noticed during the last four years in the foreign sea-borne trade of India was fully maintained during 1948-9. Both imports and exports registered further increases as compared with the figures of the previous year.

The total value of imports of foreign merchandise rose from Rs 399 crores in 1947-8 to Rs. 518 crores during the year, representing an increase of Rs. 119 crores, or 30 per cent. The improvement is to be ascribed mainly to larger imports of grain, pulse, and flour (mainly wheat and rice), cotton raw and waste, machinery including belting for machinery, chemicals, cotton and woollen yarns and manufactures artificial silk yarn, metals and manufactures thereof, vehicles excluding locomotives, etc., for railways, mineral oil other than kerosene oil, fruits and vegetables, electrical instruments, teak-wood and cloves. Decreases occurred under unset precious stones and pearls, kerosene oil, dyes and colours, glass and glassware, drugs and medicines, and tobacco.

The total value of exports increased from Rs. 395 crores in 1947-8 to Rs. 415 crores in 1948-9, recording an increase of Rs. 20 crores or 5 per cent. The main factors responsible for the increase are larger shipments of cotton piecegoods, jute bags and cloth, black tea, coal, groundnut oil, cashew kernels, unmanufactured tobacco, tanned or dressed skins and turmeric. There were, however, decreases under raw cotton, seeds (including nuts for oil), raw hides and skins, tanned or dressed hides, raw jute, raw wool, and pepper. But these decreases were more than offset by the larger exports under the items enumerated above.

The total value of re-exports, however, declined from Rs. 7.88 lakhs in 1947-8 to Rs. 7.29 lakhs in 1948-9, a drop of Rs. 59 lakhs or 7 per cent. The decrease was primarily due to reduced shipments of vehicles (excluding locomotives etc. for railways) notwithstanding an increase under cotton piecegoods.

A.—FINANCIAL RESULTS OF INDIAN GOVERNMENT RAILWAYS (INCLUDING WORKED LINES).

22. Financial results of working.—The gross traffic receipts of the Indian Government Railways, including worked lines for the year 1948-9 amounted to Rs. 213·10 crores. The ordinary working expenses during the year were Rs. 160·41 crores and the appropriation to the depreciation fund was Rs. 11·29 crores. Payments to worked lines as their share of net earnings amounted to Rs. 1·62 crores. The result of miscellaneous transactions was a net receipt of Rs. 2·56 crores. The net revenue for the year came to Rs. 42·34 crores. The interest charges amounted to Rs. 22·36 crores. There was, thus, a surplus of Rs. 19·98 crores, of which Rs. 7·34 crores were paid to the General Revenues and a sum of Rs. 84 lakhs was credited to the Railway Betterment Fund. The balance of Rs. 11·80 crores was transferred to the Depreciation Fund.

23. Traffic Receipts.—The total traffic receipts of the Indian Government Railways, excluding worked lines, amounted to Rs. 208·78 crores. The details are shown in the subjoined statement. For purposes of comparison with the previous year, the figures included in the Report for 1947-8 have been adopted in this Volume and they continue to be provisional as the pre-partition accounts have not so far been closed for want of the accounts of the late Bengal Assam and North Western Railways from the Pakistan authorities.

EARNINGS AND NET TRAFFIC RECEIPTS

Indian Government Railways

		In crores of rupees
	1947-8	1948-9
Passenger earnings	66 12	83 83
Other coaching earnings . .	15 39	18 83
Goods earnings	81 15	108 29
Sundry earnings	3 44	4 09
Suspense	−3 20	−1 94
TOTAL .	163·13	213 10
Less—Earnings of worked lines	3 28	4 32
Net traffic receipts	159·85	208 78

Taking all Class I Railways together, the distribution of passenger earnings by various classes in 1948-9 was as follows —

PASSENGER EARNINGS BY CLASSES

Class I Railways

	In lakhs of rupees 1948-9	
	for nine months	for three months
First class	1,82	
Air conditioned	.	2
Second class	5,30	
Class I	.	1,00
Inter class	4,35	
Class II	..	1,90
Third Class	57,47	
Class III	..	16,94
TOTAL	63,94	19,86

The details of traffic earnings of individual railways are given in Statements 3 and 6 of Volume II of this Report. The working expenses of each railway are given in Statements 3 and 7 of Volume II of this Report

24. Working expenses.—The working expenses of each railway are given in Statements 3 and 7 of Volume II of this Report.

25. Losses and Gains.—The statement below compares the net gain or loss of the year on each railway with that of the previous year

GAINS OR LOSSES ON INDIAN GOVERNMENT RAILWAYS

		In lakhs of rupees
Railways	1947-8	1948-9
Assam	−1,22	−3,48
Bengal Nagpur	−4,80	−1,09
Bombay Baroda and Central India .	2,09	8,02
Darjeeling Himalaya	...	− 14
East Indian	−8,18	− 11
Eastern Punjab	− 55	1,48
Great Indian Peninsula . .	66	7,70
Madras and Southern Mahratta . .	3,25	2,11
Oudh Tirhut	−5,75	56
South Indian	3,80	2,24

The tonnage of goods carried increased by 6·2 million tons or about 8·69 per cent, and each ton was carried on an average a distance of 280·1 miles as compared with 280·5 miles during 1947-8. Net ton miles, on the other hand, registered an increase of 1,712 millions or 8·52 per cent over last year.

The increased earnings were derived mainly from the following commodities: fuel, oil fuel, firewood and other fuel, rice not in the husk, gram and pulses, wheat, marble and stone, salt, sugar, refined and unrefined, wood, unwrought, oilseeds, cotton raw pressed, petrol (in bulk), cement, cotton manufactured, fodder, fruits and vegetable fresh, *gur*, jaggery, molasses, jute raw, iron and steel wrought, tobacco, provisions and other commodities, livestock, and railway materials. Decreases were substantial in fuel for foreign railways and home line constructions, jowar and bajra, and military traffic.

The principal variations in goods traffic on some railways are shown below:—

VARIATIONS IN GOODS TRAFFIC IN 1948-9 AS COMPARED WITH 1947-8

Figures in thousands

Railways	Variations in 1948-9 as compared with 1947-8 *Tons carried*
Bengal Nagpur	− 549
Bombay, Baroda and Central India	+ 17
East Indian	+5,460
Great Indian Peninsula	+ 757
Madras and Southern Mahratta	+ 113
Oudh Tirhut	+ 217
South Indian	+ 361

Detailed statistics of goods traffic will be found in Summary X, Statements Nos 13, 20 and 36 respectively of Volume II of this Report

31. Measures relating to statistics and statistical organization.—Soon after partition, certain documents relating to inter-railway transactions became unavailable and statistical work on railways received a serious setback, resulting in considerable accumulation of arrears Steps were taken during the year for pulling up the arrears and for timely compilation and issue of returns. Improvement as the result of the action taken was realized only in the following financial period.

During the year under review, two meetings of Statistical and Compilation Officers were held. One was at Bangalore in August 1948 with the Financial Commissioner, Railways, presiding The other was at Delhi, in January 1949, with the Chief Operating Superintendent, East Indian Railway, as Chairman At these meetings the difficulties experienced by railways in the prompt collection and accurate compilation of statistics on a uniform basis were discussed. Reference should also be made of the periodical meetings of operating heads of Railways with the Member, Transportation, Railway Board, presiding At these meetings special attention was given to the results of operating efficiency.

Individual railways took also various special measures to promote better study and utilization of railway statistics. Thus, on the Madras and Southern Mahratta Railway, a graph room was opened at the headquarters exhibiting over a hundred graphs showing daily, periodical and monthly figures of performance. It was open to officers and subordinates of all departments who were specially invited to inspect and study the graphs. Similar arrangements for the exhibition of important results had been made during the year by the Bengal Nagpur Railway also. Proposals for similar chart rooms were under way on the South Indian and certain other railways Another important proposal under active consideration during the year was the training in statistics of probationary officers and staff on railways.

CHAPTER III

NEW CONSTRUCTION AND ENGINEERING WORKS

32. **Capital Expenditure.**—At the end of March 1949, the total capital-at-charge of all railways including lines under construction amounted to Rs. 775·77 crores, of which Rs. 701·89 crores was the capital-at-charge of Indian Government Railways, inclusive of the premia paid on the purchase of certain companies' lines. The balance of Rs. 73·88 crores represented the capital raised by Indian States, Companies and District Boards.

The figure of capital-at-charge of Indian Government Railways is provisional pending closing of the pre-partition accounts, and comprises the following :—

	£
Liability and debt incurred in the purchase of railways .	131,164,798
Less liability and debt cancelled by the operation of annuities and sinking funds	23,756,284
Net amount outstanding	107,408,514

	Rs.
Direct expenditure by Government (in thousands) . .	5,58,67,60
Amount in sterling converted into rupees (in thousands) .	1,43,21,58*
GRAND TOTAL .	7,01,89,18

By far the greater portion of this amount, namely, Rs. 6,99,77,74,000, is Government Capital and only Rs. 2,11,44,000 is owned by Indian States, etc.

The total capital outlay on all railways during 1948-9 was Rs. 36·10 crores of which Rs. 34·40 crores related to Indian Government Railways.

The distribution of the capital outlay in 1948-9 over the different Indian Government Railways is shown in the summary below :—

CAPITAL OUTLAY ON INDIAN GOVERNMENT RAILWAYS DURING 1948-9

(Figures in lakhs of rupees)

Railways	Open Lines			New Lines			GRAND TOTAL
	Works, etc.	Rolling-stock	Total	Works, etc.	Rolling-stock	Total	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Assam Rail Link Project .	..	..	..	3,18	..	3,18	3,18
Assam	78	3	81	..	..	..	81
Bengal Nagpur	83	6	89	3	..	3	92
Bombay, Baroda & Central India	2,03	16	2,19	..	..	..	2,19
East Indian	10,38	1,32	11,70	76	..	76	12,46
Eastern Punjab . . .	1,66	46	2,12	5	..	5	2,17
Great Indian Peninsula . .	4,48	1,83	6,31	89	..	89	7,20
Madras & Southern Mahratta .	68	..	68	..	..	..	68
South Indian	78	14	92	..	..	..	92
Oudh Tirhut	1,34	8	1,42	..	..	..	1,42
Darjeeling Himalayan . .	1,10	..	1,10	..	..	..	1,10
Other Indian Railways . .	1,35		1,35	..	..	..	1,35
TOTAL .	25,41	4,08	29,49	4,91	..	4,91	34,40

* The amounts, £2,575,000, £2,000,000, £1,500,000 and £1,000,000, representing the share capital respectively of the Great Indian Peninsula, Bombay, Baroda and Central India, Madras and Southern Mahratta, and South Indian Railways (the first two amounts being paid off during 1925-6 and 1941-2 respectively, and the last two, during 1944-5) have been converted at the appropriate average rate of exchange for those years, and the balance of £100,333,514 at the rate of 1*s.* 6*d.* to the rupee.

33. Mileage of lines opened or sanctioned in 1948-9.—No new lines were sanctioned for construction during the year.

The following new lines, representing an addition of 157·82 miles, were opened to public traffic during the year.

MILEAGE OF LINES OPENED OR SANCTIONED DURING 1948-9

Railway	Name of line	Mileage	Date of opening
Eastern Punjab . . .	Rupar Talaura . . .	34 37*	9 10 48
Great Indian Peninsula . .	Restoration of Bhimsen Khairada line		
	(1) Bhimsen Hamirpur Road .	29 88	1 9 48
	(2) Yamuna South Bank Bharwa Sumerpur	6 57	1 9 48
	(3) Hamirpur Road Yamuna South Bank.	7 50	9 3-49
Nizam's State	Hadgaon Road Himayatnagar section of Mudkhed-Adilabad line	11 42	27 11 48
Oudh Tirhut	Assam Rail Link Project Conversion from N G to M G.		
	(1) Kishanganj-Thakurganj .	31 41	21 6 48
	(2) Thakurganj Naksalbari	20 73	21 7 48
Rajasthan	Kheroda Kanor section of Mavli Jn. Bada Sadri Line	15 94	18 8 48
	TOTAL .	157 82	

* This is inclusive of the length of 22 30 miles shown as opened to goods traffic on 2-2-1948 in the preceding year's Report.

34. Lines under construction during 1948-9.—Nine new lines were under construction during the year, adding up to a total mileage of 532 14 The details of the lines are shown below:—

NEW LINES UNDER CONSTRUCTION

Railway	Name of the section	Mileage under construction
East Indian	Barwadih Sarnadih section of Barwadih-Chirimiri (Bijuri) Project	41 28
Gaekwar's Baroda State	Vijapur Ransipur . .	13 92
Gaekwar's Baroda State	Protapnagar Dholka . .	67 30
Jaipur State	Sanganer Malpura Sawai Mangarh . .	75 60
Nizam's State . . .	Mudkhed Adilabad	100 69[1]
Oudh Tirhut & Assam .	Assam Rail Link Project . . .	145 00[2]
Rajasthan	Mavli Junction Bada Sadri . . .	51 00[3]
Saurashtra . . .	Pipli Gop	22 63
Saurashtra . . .	Dahinsara Malia	14 60

[1] Out of this, 21 26 miles between Mudkhed and Hadgaon Road were opened in 1947-8 and 11·42 miles between Hadgaon Road and Himayatnagar were opened in 1948-9

[2] Out of this, 52·14 miles between Kishanganj and Naksalbari was opened in 1948-9 after conversion from Narrow Gauge to Metre Gauge.

[3] Out of this, 17 55 miles between Mavli Junction and Kheroda were opened in 1947-8 and 15 94 miles between Kheroda and Kanor were opened in 1948-9

35. New surveys.—Five surveys, aggregating about 500 miles, were sanctioned during the year. The most important of these are the Kandla-Deesa-Raniwara, which runs to a total length of 220 miles passing through Cutch and Rajputana, to provide a metre gauge connection to Kandla Port, and the Chamrajanagar-Mettupalayam, a 90-mile line to connect Mysore and South Indian Railway metre gauge system. The Administration undertaking the surveys, the proposed gauge and mileage are shown in the following statement.

NEW SURVEYS SANCTIONED DURING 1948-9

Railway	*Gauge*	*Mileage*
Bombay, Baroda and Central India.		
(1) Kandla-Deesa-Raniwara	3′3⅜″	220
East Indian.		
(2) Branch lines and sidings for the development of Karanpura Coalfields	5′6″	25
(3) Mirzapur-Chopan-Pipri Reconnaissance .	5′6″	90
Oudh Tirhut.		
(4) Kumarganj-Balurghat	3′3⅜″	45
Kumarganj-Barsoi	...	30
South Indian.		
(5) Chamrajanagar - Satyamangalam - Mettupalayam	3′3⅜″	90
TOTAL .		500

36. Lines closed during 1948-9.—No new lines were closed during the year for commercial reasons.

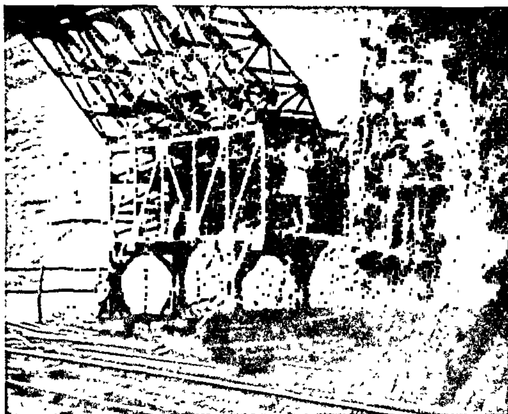
37. Engineering works.—Several important works were carried out or sanctioned during 1948-9 for increasing line capacity, improving operational facilities, etc. The more important works are briefly mentioned below.

38. Open line improvements.

(1) *Doubling of the Anand Barejadi Section—Bombay, Baroda and Central India*—(Cost. Rs. 91 lakhs).—Two large streams of traffic bound for Ahmedabad, one from Bombay *viâ* Baroda and Anand, consisting mainly of machinery, imported goods, and cotton, and the other from the east *viâ* Godhra and Anand consisting mainly of coal and iron, have to be carried over the Anand-Ahmedabad section. While the 11-mile length between Ahmedabad and Barejadi is a double line, considerable difficulty is felt in dealing with the traffic on the single line section between Anand and Barejadi. Moreover, with the construction of the new Kandla Port in Cutch, this section will also have to carry the traffic from that port to the east *viâ* Ahmedabad, Anand and Godhra. It was, therefore, considered essential to increase the capacity of the Anand-Barejadi section by providing a double line.

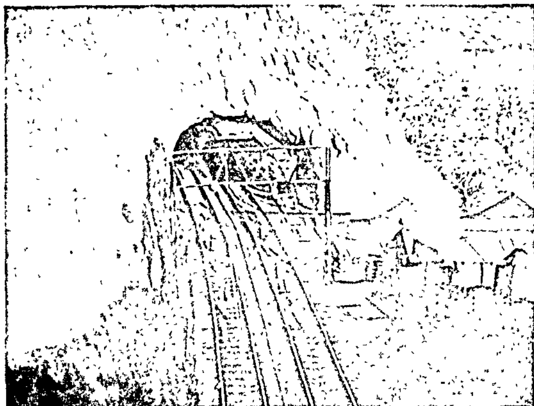
(2) *Additions and alterations to the goods yard at Kotah—Bombay, Baroda and Central India*—(Cost. Rs. 2,17,372).—The existing yard accommodation at Kotah was found to be inadequate to cope with the increase in goods traffic owing to diversion of traffic from Karachi to Bombay. The proposed additions and alterations to the goods yard at Kotah will facilitate quicker movement of traffic.

(3) *Reopening of crossing stations at Kurlasi and Alnia—Bombay, Baroda and Central India*—(Cost. Rs. 2,40,000).—Owing to a considerable increase in the traffic between Bombay and Delhi in consequence of the diversion from Karachi to Bombay, these crossing stations were reopened to facilitate movement.



TUNNEL WIDENING, G. I. P. RAILWAY. CANTILEVER STAGING TUNNEL NO. 22 BHIN GHAT, MEN DRILLING THE TUNNEL SIDE PREPARATORY TO BLASTING.

TUNNEL WIDENING, G. I. P. RAILWAY. CANTILEVER STAGING IN POSITION INSIDE TUNNEL NO. 13, BHIN GHAT, FOR WIDENING OF THE TUNNEL ON THE 'DOWN' SIDE.



(4) *Improvements in Amritsar Yard—Eastern Punjab*—(Cost, Rs. 1,86,000).—It was necessary to carry out certain additions and alterations in the Amritsar yard to provide better operational facilities for the movement of engines and rakes.

(5) *Partial doubling of the Mathura-Delhi Section—Great Indian Peninsula and Eastern Punjab*—(Cost, Rs. 103 65 lakhs).—The Delhi-Mathura Section has been a serious bottleneck to the movement of traffic between Bombay and Delhi and beyond. The position worsened with the partition of India which brought a considerable change in the trend of traffic. The traffic which used to be routed normally *via* Karachi had to a great extent to be diverted *via* Bombay, and the traffic between Bombay and Delhi and East Punjab, in consequence, increased considerably. It was, therefore, decided to provide partial doubling on this section in order to increase its line capacity. Out of 43 46 miles proposed to be doubled, 6 75 miles are on the Eastern Punjab Railway and the remaining on the Great Indian Peninsula Railway.

(6) *Improvements to traffic operating facilities on the North East Line between Madras and Vizagapatam—Madras and Southern Mahratta*—(Cost, Rs. 25,91,600) —With a view to equip this single line section to deal with the existing traffic satisfactorily and also the extra coal traffic—diverted by sea—it was decided that additional operating facilities, such as rail level platforms, second loops, etc., should be provided at a number of stations on this section.

(7) *Provision of three crossing stations between Tirupattur and Kaganknrai, Kaganknrai and Samalpatti, and Sankaridrug and Kalipatti Road stations on the Jalarpet-Erode Section—South Indian*—(Cost, Rs. 6,75,000).—In order to prevent delays to movement of trains on this section it was decided to reduce the length of some of the block sections by the provision of crossing stations in between the existing stations

39. Important works sanctioned.

(1) *Diversion track between mile 38/T. P. 7 and mile 40/T P. 21 on Moradabad-Delhi Branch*.—(Cost, Rs 7,71,218) —The River Ganga formed an embayment dangerously close to the existing approach bank In order to safeguard the continuity of the line of communications if the river eroded further and cut away the embankment, it was decided to retire the line ¼ mile further away from this river.

(2) *Assisted siding at mile 48/14 between Paradol and Chirimiri stations on the Central India Coalfields Railway to serve Messrs. Central Indian Coalfields Ltd's, Sajapahar Colliery*.—(Cost, Rs. 5,92,560); *assisted siding on the Sanctoria Branch to serve Messrs Bengal Coal Co Ltd's Chinakuri Pits Nos. 1 and 2*.—(Cost, Rs 4,60,374).—These sidings were required for the development of coalfields in the areas concerned

(3) *Provision of siding facilities for the Fertiliser Factory at Sindri near Pathardih (Stage III)*—(Cost, Rs. 16,98,435).—The third and final stage of the work in connection with the provision of the assisted siding for the Fertiliser Factory at Sindri consists of the provision of a marshalling yard between the factory and the station on the main line. Work on Stages I and II, costing Rs. 18,30,332 and Rs 2,15,496 respectively, had been sanctioned previously.

(4) *Port Arterial Siding, assisted and private siding to serve Messrs. Scindia Steam Navigation Co. Ltd.*—(Cost, Rs 8,25,978) —This siding was required to assist Messrs. Scindia Steam Navigation Co. Ltd , in the movement of heavy steel material and other equipment expected by them at Vizagapatam in connection with their shipbuilding programme.

(5) *Development of Quarry at Rattamalai, South Indian Railway*.—(Cost, Rs. 5,32,772). In order to obtain a steady and adequate supply of granite ballast and rubble required for various works on the railway, it was decided to develop this quarry and work it, utilizing up-to-date mechanical quarrying and stone crushing plant .. . .

(6) *Construction of a bridge across the Ganga at Mokameh, near Patna, East Indian Railway*—(Cost, Rs. 12 crores). All traffic between North and South Bihar, *i.e.*, on either side of the Ganga has at present to be ferried. This constitutes a serious bottleneck even for existing traffic. With the increase in traffic visualized with industrialization, particularly of the Monghyr area, the present method would be totally inadequate. It was, therefore, considered necessary to provide a bridge across the Ganga at Mokameh to facilitate movement of traffic.

The projected bridge will be the longest over the Ganga and will have 15 spans of about 400 feet and a total length of about 6,300 feet. A clearance of 40 feet above mean flood level will be provided to facilitate movement of steamers. The bridge will carry a single line broad gauge track and, if the road authorities so desire, also a 24 feet roadway on the upper deck. Out of the anticipated cost of Rs 12 crores, Rs 5 crores will be the portion debitable to the Road Authorities. A special organization under an Engineer-in-Chief for constructing the bridge was formed during the year and preliminary work, *e.g.*, preparation of designs, collection of materials, etc., was put in hand.

40. Bridge strengthening and protection programme.

Bombay, Baroda and Central India Railway. (a) Strengthening Girna Bridge at mile 186 8-14 (Cost, Rs 1,09,240). (b) B. G. System— Regirding and reconditioning girders and rebuilding sub-structures of bridges not strong enough to carry 20 ton axle load (XC engine). (Cost. Rs 1,34,67,000).

(a) On the Girna Bridge, a permanent speed restriction of 10 m.p.h. was enforced as its girders were not strong enough to carry the heavier types of engines. As the bridge is situated on an important section, linking the main lines of the Great Indian Peninsula and the Bombay, Baroda and Central India Railways, it was decided to remove the bottleneck by bringing the bridge up to the requisite standard.

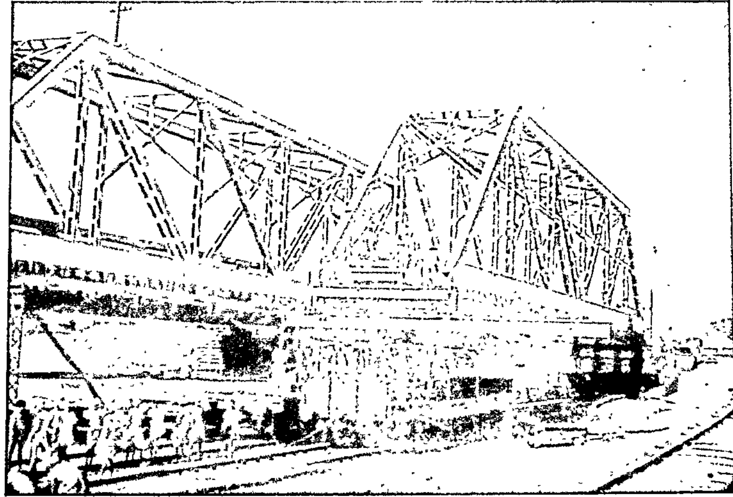
(b) Though the track on the Bombay-Viramgam line and the Baroda-Mathura main line is up to the main line standard and capable of taking the heavier and faster types of engines, most of the girders are either only up to the Branch line standard or weak, and consequently overstressed to the maximum permissible limit. It was, therefore, necessary to replace these girders on these sections as soon as possible.

The abutments and piers of the bridges mainly on the Bombay-Ahmedabad section also required rebuilding. On account of their age, the condition of some of these had steadily deteriorated. In a few cases cracks had developed, and in other cases abutments had tilted forward. Early replacement of such abutments and piers was required on considerations of safety.

Eastern Punjab Railway. Rebuilding guide bunds, raising approaches and strengthening of the masonry of piers and abutments of East Beyne girder bridge No. 25 at mile 8 13-14 on Jullundur City-Nakodar section. (Cost. Rs. 4,70,391). This bridge was heavily damaged during the floods in September 1947. The girders were partially submerged in water, the highest flood level being about 2 feet below rail level. It was, therefore, decided to raise the bridge by 4 feet and to rebuild guide bunds, raise approaches, and strengthen the masonry of piers and abutments, to suit the highest flood level.

East Indian Railway.—Extension of left guide bank of Ganga Bridge, at Garhmukhtesar—Bridge No. 52 (Cost, Rs. 16,46,131). The existing left guide bank being short, the river developed a serious embayment dangerously close to the railway line. It was, therefore, decided to lengthen the guide bank by 2,000 feet with an armoured curved head.

Great Indian Peninsula Railway.—Oalee Bridge—Rebuilding of two piers of 8-30 ft. at mile 517 J near Bankhedi on Itarsi-Jubbulpore Section. (Cost, Rs. 1,44,371). Piers Nos. 2 and 3 of this bridge were damaged by the exceptionally heavy rains in August 1947. The gap of 100 ft. between Piers No. 1 and No. 4 was temporarily spanned to maintain through communication. The piers had to be rebuilt.



REGIRDERING THE BRIDGE OVER THE LANGULIYA RIVER AT DUSI—ONE OF THE 150 FT. CLEAR SPANS IN TRANSIT IN THE RIVER BED AND PASSING THE FIRST SPAN WHICH HAS BEEN PREVIOUSLY INSTALLED IN THE BRIDGE.

41. Permanent way renewals and welding of rail joints.—Some of the important new works, besides the works in progress, which were included in the Track Renewal Programme of the year are referred to below.

(a) *Bengal Nagpur Railway.*—Re-sleepering 23·00 miles corroded steel sleepers (N+3) with C. I. Plate (C. S. T. 9) sleepers (N+2) and Duplex Rail-Free joint sleepers on the E. C. section.

(b) *Bombay, Baroda and Central India Railway.*—Re-conditioning permanent way between Bombay and Ahmedabad.

Replacing C. I. pot sleepers (N+1 density) by C. S. T. 9 sleepers (N+3) density between miles 157-3/4 to 170 and miles 197-3/4 to 199 in the Down line and between miles 246½ to 277 on the main lines on Bombay-Ahmedabad section.

Increasing the density of steel trough sleepers from (N+1) to (N+3) between miles 277 and 308 on Baroda, Ahmedabad section.

(c) *East Indian Railway.*—Re-sleepering between Bandel and Bhadreshwar for track circuiting on Howrah Division.

Re-sleepering with new C. I. and steel sleepers 51 miles on Asansol Division.

(d) *Great Indian Peninsula Railway.*—Bina - Katni section - Relaying of 80 lbs. FF, IMR track on C. I. pot sleepers with second class 100 lbs B. H. 33 ft. cropped rails with new 18" long 'E' type fish plates and fish bolts and nuts, and new keys on C. I. pot sleepers between miles 702·40 and 733·152 (excluding turnouts), amounting to 30·60 track miles.

Relaying of old 100 lbs. B. H. track on timber and pot sleepers with 2nd class 100 lbs. B. H. cropped 33 feet long rails with new standard 'E' type 20" long fish plates and new fish bolts and nuts, and new keys on 2nd hand C. I. pot sleepers with 153 lbs. troughs at joints to N+4 density throughout, except in tunnels, rock cuttings and green banks in new diversion where the track was laid on wooden sleepers on Bhore Ghat on Up and Down lines, *equalling a length of 29·198 track miles.*

Relaying of old 100 lbs. B. H. track on timber and pot sleepers with 2nd class 100 lbs. B. H. cropped 33 ft. long rails with new standard 20" long 'E' type fish plates and new fish bolts and nuts and new keys on 2nd hand C. I. pot sleepers with 153 lb. troughs at joints to N+4 density throughout except in tunnels, rock cuttings and green banks in new diversion where the track was laid on wooden sleepers on Thull Ghat on Up and Down lines, amounting to 10·42 track miles.

(e) *Welding of rails.*—During the year some welding of rail joints was carried out on a length of 14 miles on Baroda-Ahmedabad section of the Bombay, Baroda and Central India Railway, and about 4 miles on the Grand Chord of the East Indian Railway.

42. Locomotive Manufacturing Works Project.—As stated in the report for last year it was decided that the Locomotive Manufacturing Workshop should be located at Mihijam near Asansol in West Bengal. This site has since been renamed as Chittaranjan in memory of the late Deshbandhu Chittaranjan Das.

Out of about 4,000 acres of land required for the project, over 3,000 acres were acquired and taken possession of during the year. Preliminary work was started on the various shops, namely, Light Machine Shop, Pattern Shop, Heavy Machine Shop, etc. The entire workshop will consist of seven shops, covering an area of 760,000 sq. ft. and involving the use of 12,000 tons of steel work.

In addition to the workshop proper, work [illegible] progressing on the provision of a township for providing accommodation for [illegible]. The township will consist of three main [illegible] regard to [illegible] in the township will have a [illegible] borne sewage. A [illegible] adequate [illegible].

With the progress [illegible] of the machinery [illegible] expected to start in 1950.

43. Wireless communication on railways. [illegible] additional wireless [illegible] Indian Government Railways. [illegible] communication during [illegible] the heavily congested [illegible] lines.

[illegible] [illegible] 1949 [illegible] transmitter type [illegible] R [illegible] tion by the Board [illegible] and can, with proper maintenance and supply of spare parts, be kept in service for [illegible] supply [illegible] already [illegible] ment of projected W. T. circuits.

Current developments. Messrs. [illegible] Co., Ltd., the agent for Messrs. [illegible] Corporation of America, have arranged for the supply of type MRI Rail Road [illegible] Equipment 25 watt 160 Mc [illegible] for radio telephone [illegible] master [illegible] be installed in the [illegible] Railway.

On account of frequent theft of copper [illegible] provide better facilities for [illegible] to provide radio telephone [illegible] Kharagpur, Adra and [illegible] W. T. [illegible] between Adra and Kharagpur on the Bengal Nagpur Railway.

The two new medium power wireless [illegible] on the Oudh Tirhut Railway [illegible] thefts of copper wire in the unprecedented [illegible] for maintaining communication on the [illegible].

Under the Shipping Act, for purposes of safety of [illegible] in cases of emergency, wireless communication was required to be established on the two Indo-Ceylon Ferry Steamers S. S. *[illegible]* and S. S. *[illegible]* plying between Dhanushkodi and Talaimannar on the South Indian Railway. The supply of wireless sets for this installation is awaited.

To facilitate the work of construction on the Assam Rail Link Project wireless communication has been provided between the headquarters of the Engineer-in-Chief at Kurseong and his district offices at Alipurduar, Fakiragram and Siliguri and also between Kurseong and Pandu.

44. Improvement to line Telecommunication on Railways. Fairly good progress has been made as regards the Telecommunication (Lines) Improvement Schemes carried out by the Postal and Telegraphs Department on behalf of railways. The pending demands for the administrative trunk circuits, deputy and section control circuits and telegraph circuits have to a great extent been completed by the Post and Telegraphs Department and taken over by the railways. The railway administrative trunk lines on the Great Indian Peninsula Railway connecting Bombay with Delhi, and on the South Indian Railway between Trichinopoly and Villupuram have been completed. The lines on the East Indian Railway between Moradabad and Delhi are nearing completion.

Thefts of copper wire.—The position with regard to thefts of copper wire has been rather acute on the East Indian, Bengal Nagpur and Oudh Tirhut Railways. The Post and Telegraphs Department have taken these cases up at a fairly high level with the Provincial Governments and, despite the efforts of the Police, this menace still continues. The Post and Telegraphs Department are also endeavouring to minimise the duration of the resultant failures by repairing the damages promptly. These failures, however, continue to cause considerable concern to the Board and the Railway Administrations.

Public call offices.—Public telephones for the convenience of passengers have been provided at a number of railway stations.

Railway Telecommunication Committees.—Railway Telecommunication Committees consisting of representatives of the Post and Telegraphs Department and the Railways have been established at many centres. Their meetings, which have been held regularly, have brought about commendable liaison and collaboration between the railways and the Post and Telegraphs Department and has tended to improve the efficiency of railway circuits.

Canalizing of all railway demands for telephone equipment through I. T. I.—On account of an agreement between the Government of India and the Automatic Telephone and Electric Company Limited of England all telephone equipments including railway control apparatus but excluding manual exchange boards which are manufactured in the Post and Telegraphs Workshops have now to be obtained, subject to certain conditions, exclusively from this firm.

To sum up, while no essential industry was allowed to suffer, as far as transport facilities were concerned, the total demands still continued to outstrip the supply of wagons.

46. Transport of coal.—During the year under review, the control and distribution of coal continued as before, through the Coal Commissioner's office under the administrative control of the Ministry of Industry and Supply, Government of India

The movement of coal from all the coalfields, except Singareni and Talchar, showed an improvement during 1948-9 as compared with the previous year.

The despatches of coal to the Calcutta Docks for onward shipment to various consumers in India and abroad increased very considerably during the year. A record figure of 500 wagons *daily was maintained during* November 1948 in the loadings for the Calcutta Docks for shipment The increased movements to the Calcutta Docks saved the much longer movements by the all-rail route.

The wagon position, particularly on the East Indian Railway improved considerably during November 1948, when a daily average of 2,091 wagons was loaded with coal. This is believed to be a record since the introduction of control over coal This figure could not, however, be maintained in the months immediately following, when traffic in other goods increased markedly

In February 1949, the Central Board of Transport laid down a minimum guaranteed loading figure of 2,700 wagons per day for coal in the Bengal and Bihar coalfields. The actual loadings, however, exceeded this guaranteed figure during the month of March 1949

Generally, the movement for coal was comparatively free in most directions In the case of traffic for stations situated between the coalfields and Moghalsarai and beyond Moghalsarai towards the west the movement had to be regulated on account of breaches and operational set-backs from time to time. The position with regard to the coal traffic for stations on the Oudh Tirhut Railway was also affected, mainly by difficulties in the river ferry

The several Committees set up by the Ministry of Industry and Supply, such as the Coal Transport Advisory Committee, the Coal Advisory Committee and the Coal Allocation Committee, continued to render useful service in solving day-to-day problems through discussions with the representatives of the various interests concerned

47. Movement of certain commodities by special trains.—As stated in paragraph 48 of the last report, a system of running special trains from certain stations to selected destinations was introduced towards the close of the previous year.

These arrangements were patronized increasingly during the year A large variety of commodities such as foodgrains, sugar, salt, fodder, cement textiles, iron and steel, jute, manganese ore, etc., were moved by special trains

Later, the system, instead of being kept confined to wagon loads was extended to 'smalls', and non-priority goods moved from important centres, principally the ports of Calcutta and Bombay, to important towns in the interior, such as Delhi, Kanpur, Lucknow, Allahabad, Patna, Jubbulpore, Nagpur, etc. In many cases, such trains were run on nominated days to scheduled timings assuring delivery at destination within a fixed time

It is estimated that towards the end of the year, the wagon loads of traffic cleared by such special goods trains on the Broad Gauge system constituted about 12 per cent of the total wagon loadings excluding coal

The performance during the year as compared with 1938-9 indicates that railways carried 151·5 per cent more passenger traffic with 2·84 per cent less passenger train services, whilst 21·5 per cent more goods traffic was carried with an increase of only 3·73 per cent in goods train miles.

Detailed figures of train miles of Class I Railways are given in Statements Nos. 17 and 32 and those of Class II and III Railways in Statement No. 37 of Volume II of this Report.

50. Shunting miles.—' Other engine mileage ' during 1948-9 was nearly 24 per cent of the total engine mileage (including departmental), which is much the same as during the previous year

Shunting miles forming the greater portion of the unproductive mileage, amounted to about 16 per cent of the total engine miles In the following table is shown the ratio per 100 train miles of the passenger and goods shunting miles of Class I Railways during 1948-9 as compared with 1947-8 It will be observed that except in the case of metre gauge goods services there has been a slight increase under all other heads

SHUNTING MILEAGE DURING 1947-8 AND 1948-9

Class I Railways, exc B A , N W , E P and Assam

Shunting miles per train miles 100		1947-8	1948-9	Inc or dec % over 1947-8
Passenger and proportion of mixed	B G	5·69	5·91	+3·87
	M G	5·21	5·26	+0·96
Goods and proportion of mixed	B G	40·8	41·7	+2·21
	M G	45·1	44·6	—1·11

The principal features of passenger and goods train operation on Class I Railways during the year are reviewed in the following paragraphs

51. Passenger trains.—On the broad gauge, there was an (9·3) increase of ~~[illegible]~~ (0·92) per cent in vehicle miles against approximately ~~the same~~ percentage increase in passenger miles On the metre gauge, however, the increase in vehicle miles was only 3·57 per cent as against an 8·43 per cent in passenger miles.

STATISTICS OF PASSENGER TRAFFIC

Class I Railways, exc B A , N W , E P and Assam

(Figures in thousands)

Particulars	Broad gauge			Metre gauge		
	1947-8	1948-9	Inc or dec % over 1947-8	1947-8	1948-9	Inc or dec % over 1947-8
Passenger miles . . .	20,837,418	22,768,790	+9·27	9,868,112	10,699,978	+8·43
Coaching vehicle miles (inc proportion of mixed)	772,230	779,398	~~[illegible]~~ +0·92	408,367	422,927	+3·57
Passenger train miles* (inc. proportion of mixed)	51,401	52,479	+2·10	26,229	27,243	+3·87

* Includes the mileage of trains conveying passengers and of all other traffic booked at coaching rates, and empty mileage run by passenger and other coaching stock It also includes mileage of electric locomotives and electric multiple unit suburban trains as well as military specials but excludes departmental

52. Punctuality of passenger trains.—Except in the case of suburban electric multiple unit trains on the metre gauge, there was an appreciable improvement in the punctuality of passenger trains especially over the broad gauge.

56. Goods train speeds.—The average speed of goods trains was slightly lower on both the broad and metre gauges during 1948-9 as compared with 1947-8 from 10.5 to 10.3 on the broad gauge, and from 9.35 to 9.25 on the metre gauge.

57. Goods train loads.—The average net or freight load per goods train (steam) on the broad gauge increased by 47 tons from 423 tons in 1947-8 to 470 tons in 1948-9. On the metre gauge there was a very slight drop from 176 tons in 1947-8 to 175 tons in 1948-9. The East Indian Railway alone accounted for an increase of nearly 101 tons per goods train, *viz.*, from 472 tons in 1947-8 to 573 tons in 1948-9.

58. Stock usage.—The average number of engines in use daily on different services on the broad gauge increased by 4 per cent from 3,100 in 1947-8 to 3,209 in 1948-9, but the total engine miles increased only by 2 per cent from 118,902,000 to 120,682,000. This disparity accounts for the drop in the engine user which dropped by 2 per cent from 105 to 103.

A similar comment may be made as regards the stock usage on the metre gauge. The number of engines in use daily on different services increased by 5 per cent from 1,334 in 1947-8 to 1,401 in 1948-9, whereas the total engine miles increased only by 3 per cent from 51,178,000 to 52,806,000. This disparity was reflected in a decrease in the engine user which dropped from 108 to 105.

STOCK USAGE ON CLASS I RAILWAYS

Etc the B A N W E P and Assam

Particulars	Broad			Metre		
	1947-8	1948-9	Inc or dec over 1947-8	1947-8	1948-9	Inc or dec over 1947-8
Average no. of engines available for use	3,611	3,652	0.56	[illegible]	1,661	3.30
Total engine miles (in thousands)	118,902	120,652	+1.50	51,178	52,606	3.18
Engine miles per day per engine in use	105	103	−1.90	108	105	[illegible]

59. Engine usage.—Measured in terms of engine miles per day per engine on line (*i.e.*, inclusive of time occupied under repairs, etc.), the daily mileage on the broad gauge remained at the same level as in 1947-8, *viz.* 72, but on the metre gauge, it increased from 71 to 73. The percentage of engines under or awaiting repairs in Mechanical and Transportation Workshops advanced slightly from 20.2 per cent to 20.8 per cent on the broad gauge, but on the metre gauge it dropped from 19.9 per cent to 17.9 per cent.

The downward trend of ton miles per locomotive day both for the locomotives on line and for the locomotives in effective use, noticeable in previous years, was checked during the year on both gauges, except for a further decrease in net ton miles per locomotive day in use on the metre gauge.

STATISTICS OF LOCOMOTIVE USAGE

Class I Railways, etc B A, N W, E P and Assam

Year	Net ton miles			
	Broad		Metre	
	Per goods locomotive day on line	Per goods locomotive day in use	Per goods locomotive day on line	Per goods locomotive day in use
[illegible]	14,389	24,041	6,303	10,840
[illegible]	15,829	25,053	6,359	10,350

Details of engine usage are given in Statement No 22 of Volume II of this Report

60. Wagon usage. During the [illegible] slight improvement on both gauges [illegible] statistical average denote the [illegible] inclusive of loaded and empty [illegible] mileage per wagon day was 33 [illegible] 1948-49 [illegible] 1947 [illegible] the metre gauge [illegible] 1947.

The percentage of [illegible] transportation work [illegible] increased from 7.50 in 1947 [illegible] 1948-49 [illegible] from 5.87 in 1947-48 to 6.05 [illegible] 1948-49 [illegible]

Net ton-miles per [illegible] work done [illegible] compared with 1947-48 [illegible] on the metre gauge.

61. Wagons loaded with 'Smalls' [illegible] total traffic [illegible] 1948-49 [illegible] 1947 [illegible] 9.16 [illegible] 9.46 [illegible] on the metre [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Broad Gauge	[illegible]	[illegible]	[illegible]	[illegible]
Metre Gauge	[illegible]	[illegible]	[illegible]	[illegible]

62. Improvement in marshalling and other yards and their working. The principal items [illegible] referred to in [illegible] 57 [illegible]

In December 1948 [illegible] to the Transportation Department [illegible] months to advise [illegible] of improvement [illegible] Officer [illegible] regulated [illegible] of shunts [illegible] loads [illegible] originating from the [illegible] the Great Indian Peninsula and Bombay, Baroda and Central India Railways was also considerably improved [illegible] labelling of loaded wagons [illegible] Officer.

63. Wagon position, Broad Gauge Wagon Pool. The number of public service wagons (in terms of 4-wheelers) [illegible] on the broad gauge railways in the wagon pool including [illegible] Railway [illegible] at the end of 1948-49 [illegible] 187 or 526 less than that at the end of the previous year. Of these, the total number of public service wagons owned by the Indian Dominion Railways was 155,205.

The total number of wagons loaded on all the Indian Dominion Railways during the year ending 31 March 1949 was 3,635,809. A proper comparison with the previous year is, however, not possible on account of the division of the Bengal Assam and North Western Railways during that year. There was generally an increase in the loadings as compared with the previous year and a progressive reduction in the arrears in loading. The number of wagons temporarily out of service on the broad gauge railways in the Indian Dominion varied between 10,050 and 13,669.

64. Wagon position, Metre Gauge Wagon Pool.—The number of public service wagons (in terms of 4-wheelers) in use on the metre gauge railways in the Northern Metre Gauge Wagon Pool, including Pakistan Railways, at the end of the year was 61,987, *i.e.*, 117 less than that at the end of the previous year. The figure includes also the War Department stock. The total number of public traffic wagons owned by the Indian Dominion Railways in the Northern Metre Gauge Wagon Pool was approximately 36,120, excluding War Department stock, which has not been divided between India and Pakistan.

The total number of wagons loaded on the Indian Dominion Railways in the Northern Metre Gauge Wagon Pool during the year ending 31 March 1949, was 1,371,641. A proper comparison with the previous year is not possible owing to the partition of the Bengal Assam and Jodhpur Railways. There was an increase in the loadings as compared with the last year. The wagon position, however, continued to be difficult particularly because out of about 16,000 War Department wagons on line a large percentage is unfit for service.

The number of wagons temporarily out of service on the Indian Dominion Railways in the Northern Metre Gauge Wagon Pool varied between 4,475 and 5,707. The marked increase in the number of wagons temporarily out of service has also contributed to the generally tight position of wagon availability.

65. Neutral examination of interchange stock.—The staff working under the Director of Wagon Interchange continued to examine wagons interchanged between Railways at the following junctions:

Broad gauge

Ajni (Nagpur)
Chheoki
Ghaziabad
Khanalampura.
New Delhi
East Dock Junction.
Waltair *
Bongaon
Lahore
Macleodganj Road
Ranaghat **

Metre gauge (Northern Pool)

Badarpur
Lalmanirhat

Certain staff under the Director of Wagon Interchange were also posted at Moghalpura, Lillooah and Jhansi Workshops and they continued to examine wagons turned out of the workshops.

66. Coal supply and coal stock position.—At the beginning of 1948-9, the stocks of steam coal on Class I Railways were equivalent to 17 7 days' consumption. By 31 May 1948, stocks had increased so as to represent 19 9 days' average consumption, and thereafter declined until on 10 July 1948, stocks had been reduced to 18 6 days' requirements. The reason for the decline was chiefly due to operating difficulties on the East Indian Railway as a result of sickness amongst train crews. After 10 July, the position again improved, stocks rising steadily until on 30 November 1948 they were at a level of 22 6 days' requirements—the highest level attained during the previous four years.

* Neutral control reintroduced from 1 January 1947.

** Neutral control transferred from Naihati to Ranaghat from 1 March 1947.

Although it was not possible to draw firm conclusions from the statistics covering the relatively short period from 1 January 1949 to 31 March 1949, the preliminary reports from Administrations indicated in no uncertain manner that the changeover, apart from reducing railway earnings, had not been well received by the public.

During 1949-50, it has been decided to introduce on important trains, as an interim measure until the new designs of rolling stock are brought into service, a class of sleeping accommodation between Class II and Class I. This class which is designated "Class II Special" conforms very closely to the former Second class. The fare, however, is 14 pies per mile instead of 16 pies which was the basis of the former Second class fare.

B. COMMERCIAL

69. Alteration in rates and fares.

(A) Goods traffic.—The revision of the rates structure having been finalized, the main changes were brought into effect from October 1948. The principal features of the changes are summarized below:—

(a) Replacement of the flat class rates 1, 2, 2A, 2B, 2C, 3 and Special Class C by telescopic rates.

(b) Withdrawal of six standardized schedules, viz., C/A, C/O, C/M, C/L, C/H and C/X and the introduction of 13 Standard Telescopic Wagon Load Scales on continuous mileage.

(c) Withdrawal of the exceptional class and schedule rates and indefinite station to station rates.

(d) Standardization of short distance, terminal and transhipment charges.

(e) Absorption of the 12½ per cent increase charge in the basic rates.

(f) Renumbering of the classes.

(g) Replacement of the schedule rates applicable to grain and pulses and oilseeds N. O. C. in wagon loads by two telescopic scale of rates, applying on Railways grouped into two, one on continuous mileage within each group of Railways and the other on discontinuous mileage for traffic exchanged between the two groups.

(h) Withdrawal of the owner's risk classification for commodities for which the risk of carriage is negligible and bringing of the margin of difference between the O. R. and R. R. rates within reasonable limits.

(i) Enhancement of the station to station rates which were below the Railways' rate reducing powers with a view to bringing them within these limits.

(j) Prescribing a minimum charge of Rs. 1-12-0 per ton or part of a ton on the carrying capacity of the wagon used.

(k) Revision of the rates for livestock.

(l) Rationalization of the rates for coal, coke and patent fuel in full wagon loads at owner's risk, by the introduction with effect from 1 September 1948 of the following scale of rates in replacement of the Bengal Coal Scale, the C. P. Coal Scale, and the local scales applicable over the Madras and Southern Mahratta, Assam and South Indian Railways:—

	Per maund per mile
1— 200 miles	0·25 pie
plus 201— 400 miles	0·07 pie
plus 401—1000 miles	0·06 pie
plus for distances beyond	0·05 pie

plus standard terminal charge of [illegible] annas per ton at each end and standard transhipment charge of [illegible] annas per ton at each break of gauge junction.

The above scale of rates is subject to a minimum charge of Rs. [illegible]-12-0 per ton, inclusive of terminal and all other charges, and a maximum charge of Rs. 17-12-0 per ton exclusive of terminal and all other charges.

(m) Withdrawal of the increase in charges of 20 per cent. [illegible] freight rates for coal, coke and patent fuel.

(n) Withdrawal of the [illegible] rate [illegible] for [illegible] distances [illegible] for coal.

(o) Reintroduction of the rebate allowed on coal traffic [illegible] through the port of Calcutta to other [illegible] ports in the Indian Union, and to Marmugao Harbour [illegible] limited to 15 per cent. of the freight rates [illegible] of terminal.

Some of the important [illegible] Railways are summarized below.

(a) With a view to [illegible] and [illegible] Great Indian Peninsula Railway [illegible].

(b) Concessional rates for fodder [illegible] were introduced from certain stations on the Great Indian Peninsula Railway to famine stricken areas in Agra, [illegible], Ahmedabad, Broach and [illegible] districts.

(c) Rebate in freight charges [illegible] certain items of traffic booked from and to [illegible] was withdrawn.

(B) Passenger and coaching traffic. Passenger traffic: With the reclassification of passenger accommodation with effect from 1 January 1949 the scale of passenger fares were altered as referred to in paragraph [illegible].

Although it was not originally intended [illegible] public demand, Class II sleeping accommodation was introduced on certain trains. For this a surcharge was levied.

With effect from 1 January 1949 Suburban Season Ticket fares for new Class I were standardized in Bombay, Calcutta and Madras.

Coaching traffic—(1) Luggage and Parcels. With effect from 1 October 1948, the scale of charges for parcels and luggage, other than small parcels not exceeding 1 cubic foot in measurement or 2[illegible] seers in weight, to which the former scales of charges continued to apply, were revised as follows:

(a) *Basis of full parcels and luggage rates.*

4 pies per maund per mile for the first 100 miles
plus 3 pies per maund per mile for the next 100 miles
plus 2 pies per maund per mile for the next 500 miles
plus 1½ pies per maund per mile for distances beyond.

NOTE.—The half and quarter parcels rates are respectively half and quarter the charge leviable under the above scale rounded off to the next higher anna.

(b) *Basis of rates for betel or pan leaves, butter, cream, etc.*

3 pies per maund per mile for the first 100 miles
plus 2 pies per maund per mile for the next 100 miles
plus 1½ pies per maund per mile for the next 600 miles
plus 1 pie per maund per mile for distances beyond.

(2) *Scales of charges for other descriptions of coaching traffic*—With effect from 1 October 1948, the scale of charges for other forms of coaching traffic, the principal items of which are shown below, were also enhanced

(a) Tourist cars and saloons.

(b) Special trains for the public.

(c) Special trains for High Officials.

(d) Dogs, elephants, camels, ponies, calves, sheep and goats

(e) Palanquins.

(f) Motor cars, motor boats and aeroplanes

(3) *Other important modifications made from 1 October 1948*

(a) "Increased charge" on luggage and parcels and "Increased charge" and "Surcharge" on passenger traffic were withdrawn.

(b) Standard terminal charge was levied on luggage and parcels traffic and also on traffic in motor cars, carriages, etc., and live-stock.

(c) Supplementary charge leviable for travelling in air-conditioned coaches was enhanced.

70. Effect of the changes in rates and fares introduced at the beginning of 1948 and 1949.

Goods traffic.- Three important factors affecting goods traffic contributed to the increase in freight earnings during the year The first was the partial revision of the rates structure on 1 January 1948, and the second the introduction of a rationalized coal scale with effect from 1 September 1948 The last was the practically complete revision of the goods rates incorporated in the rates structure brought into effect on 1 October 1948

On the Bengal Nagpur Railway, substantial increases occurred in earnings from coal, manganese ore, iron ore, limestone and general merchandise, the drop in the volume of traffic being due not to the effects of the rate changes but mainly to shortage of wagons

On the East Indian Railway, during the period from April to August 1948, there was a drop of 16 95 per cent in the net ton miles of coal but here again this was not the outcome of the new rates for coal but of other factors. Earnings from coal recorded a slight increase of 0 81 per cent That the new scale has not retarded coal movements is clear from the fact that during the period September 1948 to March 1949, the tonnage carried and ton mileage of coal were substantially higher than the figures of the corresponding period of the previous year Earnings on this traffic increased by Rs. 318 42 lakhs or 89 47 per cent The details may be seen from the following table.

COAL TRAFFIC AND EARNINGS ON THE E I. RAILWAY DURING 1947-8 AND 1948-9

PARTICULARS	1948	1947	Difference over 1947	
			Increase (+) Decrease (—)	Per cent Increase (+) Decrease (—)
		April to August 1948		
Earnings (in thousands)	Rs 2,66,18	Rs 2,63,89	Rs +2,29	+0 81
Tons carried (in thousands)	4,717	5,842	—1,125	—19 26
Net ton miles (in thousands)	1,609,816	1,938,343	—328,527	—16 95
		September 1948 to March 1949		
Earnings (in thousands)	Rs. 6,74,32	Rs. 3,55,90	Rs. +3,18,42	+89 47
Tons carried (in thousands)	10,203	7,100	+3,103	+43 70
Net ton miles (in thousands)	3,104,542	2,076,608	+1,027,934	+49 50

Statistics of the number of passengers carried and the earnings therefrom on certain Indian Government and State Railways during 1948-9 are compared with those for 1947-8 in the statement below

NUMBER OF PASSENGERS AND EARNINGS ON SELECT RAILWAYS

Particulars	1947-8	1948-9	Increase or decrease over 1948
(a) [illegible]			
No. of passengers	[illegible]	87,490,000	6,3[illegible]
Earnings	Rs 4,27,[illegible]	Rs. 5,93,00,000	Rs. [illegible]
(b) [illegible]			
No. of passengers	[illegible]	7,391,000	[illegible]
Earnings	Rs. [illegible]	Rs. 83,48,000	Rs. [illegible]
(c) [illegible]			
No. of passengers	[illegible]	188,232,000	[illegible]
Earnings	Rs. [illegible]	Rs. 19,37,16,000	Rs. [illegible]
(d) [illegible]			
No. of passengers	[illegible]	183,80[illegible]	[illegible]
Earnings	Rs. [illegible]	Rs. 19,12,23,[illegible]	Rs. [illegible]
(e) [illegible]			
No. of passengers	[illegible]	6,37[illegible]	[illegible]
Earnings	Rs. [illegible]	Rs. 82[illegible]	Rs. [illegible]
(f) [illegible]			
No. of passengers	[illegible]	10,918,[illegible]	[illegible]
Earnings	Rs. [illegible]	Rs. 3,19,6[illegible]	Rs. [illegible]
(g) [illegible]			
No. of passengers	[illegible]	97,109,0[illegible]	[illegible]
Earnings	Rs. [illegible]	Rs. 7,00,91,000	Rs. [illegible]
(h) [illegible]			
No. of passengers	[illegible]	142,103,000	[illegible]
Earnings	Rs. [illegible]	Rs. 7,59,09,0[illegible]	Rs. [illegible]

[illegible]

71. Efforts to secure better wagon usage and wagon loads.—The measures adopted by Railways during previous years in order to secure better usage of wagons and improved wagon loads were continued. With effect from 1 October 1948, standard minimum weight conditions were prescribed for several commodities carried in wagon loads. Nominated loading was introduced for special commodities in full train loads between important centres. Reference to certain other steps taken during the year are summarized in the following paragraphs.

On the Bengal Nagpur and Great Indian Peninsula Railways the minimum load for the *Through Road Van* was raised to 250 maunds.

In order to avoid weighment of wagons and to eliminate the demand for larger types of wagons, lump sum rates on the floor area basis were introduced for bamboos, splints and chips for paper making when booked from Bengal Nagpur Railway stations to Titaghur, Naihati and Kankinara Paper Mills. Similar rates for charcoal and firewood were introduced in local booking over the Great Indian Peninsula Railway. Fixed weights for charge according to the floor area of the wagons used were introduced over the Bengal Nagpur Railway for bamboos for paper mills, charcoal and firewood, in order to avoid weighments with a view to securing better turn-round of wagons.

The free time for loading and unloading of wagons at certain sidings over the East Indian Railway was reduced to six hours. The free time for the removal of consignments from the goods sheds at certain stations was reduced and enhanced wharfage rates on sliding scales introduced at Howrah, Ramkistopore, Salkea, Monghyr, Bhagalpur, Sakrigali Ghat, Serampore, Sheoraphuli and Bally.

In order to discourage bogus registration of wagons, instructions were issued to Railways to levy a wagon registration fee of Rs. [illegible] per broad gauge wagon, Rs. 25 per metre gauge wagon and Rs. [illegible] per narrow gauge wagon, at the time of registration of goods. The registration fee is adjusted in the freight charges when the consignment is booked, but is liable to forfeiture if the goods are not ready for despatch, or if the allotment [illegible] rejected. The fee is refunded if the registration is cancelled before it comes to the notice of railway officials that goods are not ready for [illegible] before allotment of wagons, whichever is earlier.

The following categories of traffic are, however, exempted from the scope of the levy of the wagon registration fee:

(a) military traffic;

(b) indents by railways [illegible];

(c) traffic brought on to railway premises [illegible] and registered for despatch [illegible].

There is evidence that the introduction of this registration fee has been beneficial in preventing [illegible].

72. Coordination of rail, road and water transport.—During the year the Railways serving the Bombay Presidency invested a sum of Rs. 66.7 lakhs representing 25 per cent of the [illegible] capital, in the Bombay Government's nationalisation scheme. In the Central Provinces and Berar, consequent on the withdrawal of the Managing Agents of the Central Provinces Transport Services Limited, [illegible] the Railways purchased 50 per cent of the [illegible] shares, the total investment being Rs. 3.92 lakhs. Other Provinces [illegible] to report.

As regards coordination with inland water transport during the year there was no important development to be reported.

73. Closer contacts with business interests.—Railways continued to maintain close contacts with business interests through informal meetings with Chambers of Commerce, trade associations and merchants at important centres. The subjects discussed at these meetings related to such matters of current interest to the business community as wagon supply, booking restrictions, delays to goods in transit, better transport facilities, the settlement of claims, freight charges, etc. Railway representatives in their capacity as members thereof maintained close liaison with Chambers of Commerce and participated in the deliberations of Transport Sub-Committees of these bodies. Such contacts proved of value in fostering good relations and understanding between the railways and commercial interests.

74. Claims for compensation and refunds.—Despite various measures adopted by the Railways to expedite the disposal of claims, the number of claims remaining unsettled at the end of the year was higher than that of the previous year. The main reasons for this were:

(a) the unprecedented increase in the number of claims received during the year;

(b) the change in the procedure under which enquiries regarding non-receipt of packages or consignments which were previously treated as 'No claims' cases, are now treated as 'Claims' cases immediately on receipt of intimation from the public;

(c) difficulty experienced in obtaining the necessary information or files from the Pakistan Railways in connection with pre-partition claims, which are required to be settled by the Indian Railways.

The following statements for Class I Railways show for 1948-9:—

(A) the number of claims received in respect of goods or parcels damaged or lost, and of goods and parcels overcharged, and the average time taken in their settlement,

(B) the number and value of claims in respect of goods or parcels lost or damaged under main causes;

(C) the number of court cases in respect of goods or parcels lost, damaged or delayed and their disposal.

Statement A

Claims received for Goods or Parcels damaged, lost or overcharged, and the average time for settlement

Item No.	Particulars	Assam	B N	Bikaner State	B B & C I	E I	E P	G I P	Jodhpur	M & S M	Mysore State	N S	O T	S I
1	Number of claims involving compensation for goods or parcels lost, damaged, or delayed carried over as unsettled at the close of the preceding year	[illegible]	14,434	7,[illegible]	[illegible]	22,151	21,9[illegible]	40,965	5,945	7,721	3,717	5,934	20,539	2,52[illegible]
2	Number of claims received (and re-opened) for compensation on account of goods or parcels lost, damaged, or delayed during the current year	12,[illegible]	30,[illegible]	8,074	41,340	12[illegible],135	31,104	64,944	8,445	26,042	6,219	6,722	43,813	9,441
3	Number of claims referred to against items 1 and 2 settled during the year	11,[illegible]	41,357	4,[illegible]	34,948	115,[illegible]	43,131	84,777	8,932	26,371	7,107	6,637	61,245	10,426
4	Balance outstanding as unsettled at the close of the year	3,411	2[illegible]	7,54[illegible]	31,724	30,[illegible]	4,022	2[illegible],912	6,0[illegible]	5,413	2,[illegible]	6,01[illegible]	15,201	1,582
5	Net amount paid in compensation Rs.	*21,[illegible]	23,[illegible]	65,113	8,73,012	25,24,912	4,91,[illegible]	11,41,[illegible]	23,335	9,31,61[illegible]	—13,943	1,13,[illegible]	—76,531	1,00,[illegible]
6	Percentage of sum paid in compensation (item 5) to gross earnings	3·[illegible]	1·3[illegible]	3·26	0·22	0·[illegible]	0·45	0·42	0·23	0·49	—0·15	0·21	—0·16	0·13
7	Average time taken in settlement of claims shown against items 1 & 2 (Days)	61	11[illegible]	95	115	[illegible]	79	132	93	117	104	277	70	67
8	Number of applications received for refunds on goods and parcels overcharged	7,441	4,315	1,217	11,7[illegible]	34,925	13,165	14,154	3,754	19,494	[illegible]	2,843	4,850	27,732
9	Average time taken in settlement of claims shown against item 8 (Days)	72	144	60	67	47	35	56	117	45	84	235	90	52

Statement B

Number and value of claims paid

Item No.	Particulars		Assam	B N	Bikaner State	B B & C I	E I	E P ‡	G I P	Jodhpur	M & S M	Mysore State	N S	O T	S. I.
1	Claims paid on account of goods lost	No.	712	12,321	5[illegible]	3,[illegible]1	21,[illegible]		22,036	742	2,5[illegible]9	Nil	1,040	6,076	1,615
		Value Rs.	2,[illegible]447	13,24,5[illegible]	43,532	3,99,5[illegible]	61,[illegible]		21,04,424	68,275	5,39,293	Nil	96,460	5,97,250	1,04,795
2	Claims paid on account of goods stolen	No.	2[illegible]3	3,725	3	26	3,073	.	†	134	53	Nil	57	3,542	37
		Value Rs.	57,345	7,41,073	6[illegible]	31,722	3,06,3[illegible]		†	9,4[illegible]6	35,632	Nil	11,57[illegible]	11,70,512	9,081
3	Claims paid on account of goods damaged by wet	No.	51	90	11	370	4[illegible]		2,972	2	101	Nil	7	135	71
		Value Rs.	14,346	34,716	723	3[illegible],773	50,31[illegible]		2,23,570	363	23,336	Nil	2,77[illegible]	16,401	11,467
4	Claims paid on account of goods damaged by fire	No.	Nil	3	Nil	8	1		Nil	Nil	11	Nil	6	5	1
		Value Rs.	Nil	4,614	Nil	3,41[illegible]	62		Nil	Nil	43,793	Nil	1,0[illegible]	1,6[illegible]0	62
5	Claims paid on account of goods damaged by breakage	No.	10	20	1,632	20	94	.	874	1	72	Nil	23	159	61
		Value Rs.	565	2,154	50,[illegible]	2,651	8,679		69,817	5	11,384	Nil	2,632	18,716	4,763
6	Claims paid on account of parcels and luggage lost and stolen	No.	302	7,158	76[illegible]	3,227	10,037	.	2,421	399	2,590	Nil	439	4,010	934
		Value Rs.	71,534	9,94,603	12,633	2,61,0[illegible]	10,37,2[illegible]7	..	1,14,095	23,123	4,33,0[illegible]6	Nil	1,52,58[illegible]	5,90,700	63,933
7	Claims paid on account of other causes	No.	1,335	223	31	8,522	1,024	..	9,070	23	6,800	1,813	735	1,640	1,897
		Value Rs.	3,77,162	2,43,4[illegible]	630	15,59,035	75,453	.	18,21,122	12,539	5,49,3[illegible]5	10,983	1,07,007	3,87,473	*2,15,151

* Provisional.

† Included under item 1.

‡ Localization of losses was not possible during the year and hence claims paid have not been completely allocated to the various causes.

Statement C

Number of [illegible]

Particulars	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

75. Special drive for disposal of arrears [illegible] claims, for prevention of claims and problems created by partition. [illegible] procedure for the [illegible] 1949. All [illegible] the date of [illegible] they can be [illegible] procedure [illegible] from the [illegible] consignment [illegible] partial short[illegible] immediately [illegible] already on record.

In order to [illegible] important stations and Claims Inspectors [illegible] up to Rs. 50 in certain [illegible] delivery of the consignment.

The inter-railway claims [illegible] correspondence involved in fixation of [illegible] secure expeditious disposal of claims [illegible]

The Claims Prevention Drive was further [illegible] particular attention being directed towards [illegible] in working which were responsible for the bulk of the claims [illegible]. A carefully planned publicity campaign known as the "P. L. M. (Pack, Label and Mark) Campaign" comprising press advertisements, posters, [illegible], blotter *cum* almanacs, stickers and illustrated literature was [illegible] to secure maximum public cooperation.

Under an agreed directive issued prior to partition, all claims were to be settled by the Railway on which the destination station was situated. For certain reasons, the Pakistan Railways resiled from this agreement except in respect of claims relating to traffic carried exclusively on what is now a Pakistan Railway. The decision was, therefore, taken that the despatching or the receiving Indian Railway, as the case might be, would deal with these claims. The Pakistan Railways were requested to make the relevant records available, or to furnish the information required for the disposal of such claims. Much delay has, however, occurred in the release of records, and information has been extremely difficult to obtain. In consequence progress in the disposal of pre-partition claims has not been all that could be desired.

76. Prevention of ticketless travel.—The measures for the prevention of ticketless travel outlined in the Report for 1947-8 were continued during the year. Reference was made last year to the arrangement by which the Government of the United Provinces provided special police and magistrates, the railways defraying the cost. Arrangements were concluded with the Government of Bombay during 1948-9, for the provision of additional police in furtherance of the special measures adopted by the Great Indian Peninsula Railway for prevention of ticketless travel in the Bombay Province The railway undertook to defray the cost of the additional police but the cost of additional magistrates were borne by the Government of Bombay

77. *Mela* traffic.—As the movement of pilgrims to various centres where *melas* and fairs were held was no longer restricted, traffic demands on these occasions were met by the adoption of such operational arrangements as were practicable within the limits of the rolling-stock available.

78. Measures to ensure civility and assistance on the part of railway staff in their dealings with the public.—Strenuous efforts continued to be made to promote a spirit of courtesy and helpfulness on the part of the staff towards passengers and other members of the public Serious and prompt notice was taken of all complaints received from the travelling public in this connection, and instances of exceptional services or assistance were rewarded.

79. I[illegible] of tickets.—With the increased [illegible] booking windows, little difficulty [illegible] n obtaining tickets at stations

CHAPTER V

RAILWAY COLLIERIES

80. Output from principal railway collieries.—The total output from the principal railway collieries during the year 1948-9 as compared with that during the previous year is shown in the accompanying table. There has been a decrease of 386,521 tons or 11.52 per cent as compared with the previous year.

OUTPUT OF COAL FROM RAILWAY COLLIERIES DURING 1948-9

(In tons)

Colliery	Railway	[illegible]	1948-9 Total	Selected A	Selected B	Grade I	Grade II
1. Bhurkunda	E. I.	15[illegible]247	115,141			11[illegible],141	
2. Kargali	G. I. P.	[illegible]	6[illegible],518			606,495	23
3. Kurharbaree and Serampore	E. I.	[illegible]	44[illegible]	358,436	84,914	2,633	
4. Joint Bokaro	E. I. and B. N.	1,2[illegible]	1,090,217			1,090,217	
5. Joint Sawang	E. I. and B. N.	47,[illegible]	15,899			15,899	
6. Jarangdih	B., B. & C. I. and M. & S. M.	[illegible]	21,315				21,315
7. Talcher	M. & S. M.	[illegible]	139,578				139,578
8. Kurasia	B., B. & C. I.	[illegible]	[illegible]			329,[illegible]	
9. Argada	B. N.	[illegible]	128,047			128,047	
10. D[illegible]	B. N.	[illegible] 214	66,77[illegible]				66,778
Total		[illegible]	2,659,[illegible]	[illegible],436	84,914	2,[illegible],591	227,694

The total quantity of coal despatched by railway collieries during 1948-9 amounted to 2,688,876 tons of which 2,659,100 tons or 98.9 per cent, were despatched to railways. This represents 26.8 per cent of the total coal consumption of railways during the year.

81. Coking coal.—The particulars of the coking coal produced by railway collieries during the year are summarized in the following statement:

Colliery	Grade and quantity (in tons) of coal produced		Quality of coal and where used
1. Kargali	Grade I—	606,495	Inferior coal of high ash content and poor coking properties, used entirely for goods services.
	Grade II	23	Very inferior coal unsuitable for metallurgical purposes owing to high ash content. Used for slow goods and shunting services.
2. Giridih (Kurharbaree and Serampore.)	Sel. A— Sel. B	358,436 84,914	Best high grade coal, the dust of which is manufactured into hard metallurgical coke for use in Railway Foundries and Workshops. Used for mail and express goods services.
	Grade I—	2,633	Inferior grade coal which cannot be used for production of metallurgical coke unless blended with other high grade coals or specially treated by washing. Used mainly for goods services.
3. Joint Bokaro	Grade I—	1,090,217	Inferior grade coal, the dust of which only is suitable for metallurgical purposes. The seam worked as a whole cannot, owing to high ash content, be used even for blending with high grade coals, unless intensive cleaning and washing is resorted to. Used entirely for goods services.
4. Joint Sawang	Grade I—	15,899	Ditto.
5. Jarangdih	Grade II—	21,315	Very inferior coal, unsuitable for metallurgical purposes. Used for slow goods and passenger services.
6. Argada	Grade I—	128,047	Inferior grade coal unsuitable for metallurgical purposes owing to its high ash content. Used for goods and shunting services.

82. Total coal consumed by railways.—The total amount of coal consumed on Class I, Class II and Class III Railways during the year is shown below, along with figures for the previous year

	Tons	
Class I Railways—	1917-8	1918-9
Indian Government Railways	8,292,567	9,198,855
Other Class I Railways	392,691	376,644
Class II Railways	226,261	235,453
Class III Railways . .	79,153	84,795
TOTAL	8,990,672	9,895,747

The distribution by grade of the total quantity of coal consumed by railways is as follows:—

	Tons	
Grade	1917-8	1918-9
Selected A . . .	859,248	1,158,832
Selected B	1,620,257[1]	2,154,491
Grade I	4,201,962	4,533,986
Grade II	1,428,115	1,457,662
Grade III A and B . .	497,827	205,457
Small coals	344,451	385,319
TOTAL	8,990,672[1]	9,895,747

83. Coal mined in India.—In 1918-9, the coal mined in the various provinces of India amounted to 27,438,802 tons as against 26,892,893 tons in 1917, an increase of 545,909 tons.

84. Coal despatched by rail.—The quantity of coal carried by the East Indian and Bengal Nagpur Railways during 1918-9 was 24·45 million tons, or 2·09 million tons more than that carried during the previous year The comparative figures for the two railways are as follows:—

	Tons	
	1917-8	1918-9
East Indian Railway	12,942,295[1]	14,919,713
Bengal Nagpur Railway . .	9,415,855[1]	9,526,943
TOTAL .	22,358,150	24,446,656

[1] Revised figures

CHAPTER VI

ROLLING-STOCK AND MATERIALS

85. Additions to equipment.—During the year, orders were placed for the following locomotive and rolling-stock, for broad and [illegible] gauge Indian Government Railways. The figures exclude the stock built in railway workshops.

	Broad gauge	Metre gauge
Locomotives	[illegible]	[illegible]
Coaching stock		
Goods stock	[illegible]	

New locomotives and rolling-stock actually placed on line during the year are as stated below:

	Broad gauge	Metre gauge
Locomotives	71	[illegible]
Coaching stock	[illegible]	[illegible]
Goods stock	[illegible]	

[illegible]

86. Locomotives.—The average [illegible] in the [illegible] Railways during 1948-49 [illegible] during 1947-48, showed a [illegible]. The average [illegible] for the [illegible] and the Electric locomotives [illegible] last year. The details [illegible] table:

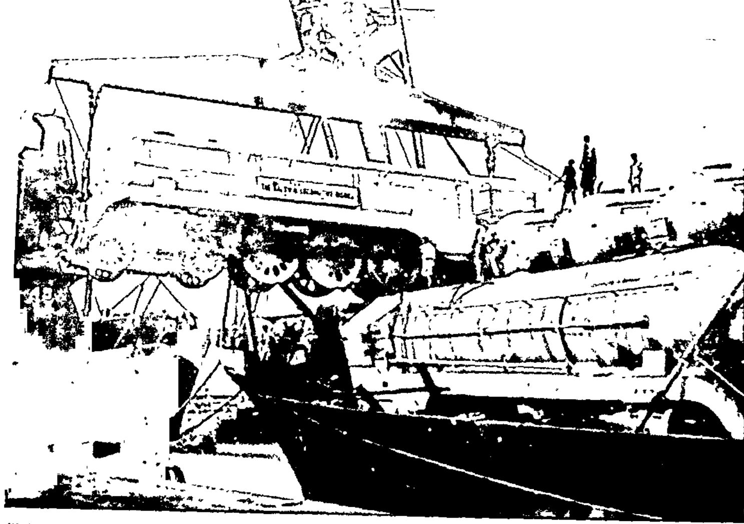
AVERAGE [illegible]

Locomotives	Broad gauge		Metre gauge	
	[illegible]	1948-49	[illegible]	1948-49
Steam [illegible] types	[illegible]	27,439	[illegible]	15,737
Diesel Electric	[illegible]	25,312		..
Electric	[illegible]	30,754	[illegible]	10,439

87. Scrapping of overage and uneconomical locomotives.—During the year railways were advised of the importance of eliminating locomotives which were uneconomical in service, and getting such engines off the line on receipt of new engines allotted to them by the Board. This would not only help to lighten the load on workshops and release capacity for repair of the new engines, but also to enable railways to reclaim spares from the scrapped engines, thus reducing the requirement of such spares for the maintenance of similar engines left on line. Steps in this direction are being taken by the railways concerned, and it is expected that a number of uneconomical and condemned engines will be broken up during 1949-50.

88. Manufacture of boilers and locomotives in India.—The Locomotive Building Works under construction at Mihijam have now been renamed as Locomotive Manufacturing Works, Chittaranjan. A more detailed reference to this project is made in para. 42 of Chapter III.

Messrs. Tata Locomotive and Engineering Company Limited completed [illegible] boilers during the year.



W. P. TYPE BALDWIN LOCOMOTIVE, G. I. P. RAILWAY BEING UNLOADED (COURTESY 'TIMES OF INDIA', BOMBAY)

89. Repairs to locomotives in Railway Workshops and Running Sheds.—Although the average number of engines under, or awaiting, repairs in running sheds increased on some railways, the overall position of engines out of service improved as compared with 1947-8, on both broad and metre gauges.

There was an appreciable increase in the number of locomotives repaired in railway workshops and a decrease in the number overdue periodical overhaul.

Difficulties were experienced by workshops as a result of shortages in particular classes and sizes of steel. There were also shortages of certain spare parts for which the Railways have been dependent upon outside supply. In order to expedite the supply of essential spare parts, it was decided to send a Purchase Mission to visit different countries in Europe with a view to obtaining locomotive spare parts on a rate contract basis.

90. Rationalization of manufacturing capacity in Railway Workshops.—The Rationalization Committees were regrouped on the basis of the types of locomotives common to each of the railways in the group. A few items have been selected for manufacture by one railway on mass production lines in order to meet all the requirements of the Government Railways.

A special allotment of steel is being made in each quota period for fittings to be made by Ordnance Factories under the Rationalization Scheme.

Good progress has been made with the preparation of part drawings of American type locomotives.

91. Supply of rails and fishplates from indigenous sources.—Reference was made in the last report to the restricted supplies of steel during 1947-8. The position with regard to supplies of steel has been no better during the current year. The indigenous production of rails and fishplates during 1948-9 was placed at about 72,000 tons, out of which *52,609 tons were to be supplied against unexecuted outstanding orders from* previous years with the indigenous firms, *viz.*, Messrs. Tata Iron and Steel Company Limited and the Steel Corporation of Bengal Limited. The balance was allocated against 1948-9 requirements. The actual out turn by the two firms during 1948-9, however, amounted to only 58,557 tons of rails and 3,827 tons of fishplates, or 62,384 tons in all, instead of 72,000 tons, as expected.

92. Wooden Sleeper Purchase Organization.—The total value of timber and sleepers purchased by Class I Railways (excluding the Jodhpur, Mysore, and Nizam's State Railways) during 1948-9 was as follows:

	(In thousands of rupees.)
Timber .	1,71,70
Sleepers . .	1,05,71

The relative position of various kinds of sleepers may be seen from the *following* percentages based on the total number of sleepers in the tracks of Class I Railways, excluding the Mysore Railway:

(Figures are in percentages.)

	Wood	Cast iron	Steel	Others
Broad Gauge . .	27.00	50.31	22.23	0.34
Metre Gauge . .	69.02	4.86	25.52	

The Wooden sleeper track mileage, including sidings, of the broad, metre and narrow gauges on Class I Railways, excluding the Mysore Railway, as on 31 March 1949 was as follows:

	Miles
Broad Gauge	7,[illegible]·11
Metre Gauge	10,517·41
Narrow Gauge	1,29[illegible]·67
TOTAL	19,[illegible]

out of a grand total mileage, excluding sidings, of:

	Miles
Broad Gauge	15,650
Metre Gauge	12,622
Narrow Gauge	1,854

No wooden sleepers were imported for use by Indian Railways.

The average price of 1st Class Sal sleeper in the Eastern Group was:

Broad Gauge	Rs. 18-8-0 per sleeper
Metre Gauge	Rs. 8-0-11 „ „

At the Dhilwan creosoting plant on the Eastern Punjab Railway, 238,948 Broad Gauge sleepers of coniferous species were treated with a mixture of 40 per cent creosote and 60 per cent of fuel oil during 1948-49. The details are given below:

—		[illegible]	*Chir*	[illegible]
No. of sleepers treated		[illegible]	[illegible]	[illegible]
Average absorption of mixture per sleeper	lbs.	[illegible]	[illegible]	[illegible]
Cost of treating per sleeper	Rs.	1-1-[illegible]	2-7-7*	1-12-11

* Higher cost of treating *chir* sleepers is on account of higher transport charges to Dhilwan namely Rs. 0-10-8 as compared to Rs. 0-2-9 for fir per sleeper.

Besides these, a number of sleepers for Bhakra Dam, Sleeper ends, Poles and Metre Gauge sleepers, etc., equivalent to 49,263 Broad Gauge sleepers, were also treated during the same period.

At Naharkatiya Treating Plant in Assam 7,055 Broad Gauge and 154,170 Metre Gauge sleepers of various species like *Hollong*, *Hollock*, *Jutli*, *Sam* and *Makai* were treated during the year. The cost of treatment per sleeper was Rs. 4-6-5 per Broad Gauge and Rs. 2-3-2 per Metre Gauge sleeper.

93. Value of railway materials purchased.—The total value of stores purchased by the Indian Government Railways during the year, including the Eastern Punjab and Assam Railways amounted to Rs. 100·44 crores.

The value of stores purchased by Indian Government Railways, excluding the Eastern Punjab and Assam Railways which came into existence on 15 August 1947, increased from Rs. 78.29 crores in 1947-8 to Rs. 91·91 crores in 1948-9. The value of indigenous materials purchased increased by Rs. 7,20 lakhs and that of imported materials by Rs. 6,42 lakhs. There was a general increase under all the heads of purchases, except under miscellaneous stores, which recorded a small decrease of Rs. 29 lakhs. This item is shown in the statement below as "All other stores". The main items of increase were under 'stores hardware', copper, tin, etc., by Rs. 6,05 lakhs, permanent way materials and track tools by Rs. 3,17 lakhs, and rolling-stock by Rs. 2,48 lakhs. Electric and train and locomotive lighting plants, etc., advanced by Rs. 99 lakhs, workshop machinery, etc., by Rs. 52 lakhs and building materials, water mains, etc., by Rs. 56 lakhs.

The following statement presents a summary of the stores purchased during 1948-9 and the corresponding figures for 1947-8. The detailed figures are given in Appendix A of Volume II of this Report.

VALUE OF RAILWAY MATERIALS PURCHASED DURING 1948-9

(Figures in lakhs.)

Particulars	Including Eastern Punjab and Assam					Total purchases excluding Eastern Punjab and Assam	
	Imported materials						
	Purchased direct	Purchased through agents in India	Total imported materials	Indigenous materials	Total	1948-9	1947-8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
(A) Bridge-work and its parts, fittings and special fastenings	..			3	3	8	2
(B) Engineering plant and components including all hand and power machinery	13	11	24	12	36	23	15
(C) Workshop machinery, plant and equipment including pneumatic machinery and tools	39	67	1,06	16	1,22	1,20	65
(D) Permanent way material and track tools	1,04	52	1,56	6,03	7,59	6,87	3,70
(E) Rolling-stock	74	5,76	6,50	3,27	9,77	8,41	6,93
(F) Building materials, water mains, sewage system and track and yard enclosing materials and signal and interlocking materials, etc.	3	21	24	1,59	1,83	1,42	86
(G) Stores, hardware, copper, tin and zinc ware, all leather, canvas and India rubber in bulk, materials, painters' stores, timber and fuel oil, etc.	7	1,46	1,53	22,91	24,44	22,23	18,18
(H) Electrical and train and locomotive lighting plants and materials, etc., and telegraph and telephone equipment	26	1,09	1,35	1,11	2,46	2,20	1,21
All other stores	8	1,57	1,65	50,79	52,44	48,27	48,56
Total	2,74	11,69	14,43	86,01	1,00,44	91,91	78,29

94. Intake of indigenous goods.—Of the total value of purchases of railway stores and materials made during 1948-9 by the Indian Government Railways, the value of stores imported direct amounted to Rs. 2,73.97 lakhs. Imported stores purchased in India accounted for Rs. 11,69.33 lakhs. Stores of Indian manufacture or indigenous origin have naturally accounted for the bulk of the expenditure, the amount during the year being Rs. 86,00.88 lakhs or 85.63 per cent of the total.

The comparative figures of total purchases for 1947-8 and 1948-9 in respect of the Indian Government Railways (including the Eastern Punjab and Assam Railways) are given below. These include purchases made through the Ministry of Industry and Supply and other Government agencies, and purchases of foodgrains for Railway grain shops.

TOTAL VALUE OF PURCHASES OF STORES

[(In lakhs of rupees)]

Year	[Stores imported direct]	[Imported stores purchased in India]	[Stores of Indian manufacture or indigenous origin]	[Total value of stores purchased]	[Percentage of col. 4 to col. 5]
1	2	3	4	5	6
	Rs.	Rs.	Rs.	Rs.	Rs.
1947-8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1948-9	2,73.97	11,69.33	86,00.88	1,00,44.18	85.63

95. Value of stores purchased through the Ministry of Industry and Supply.—The comparative figures of the value of stores purchased through the Ministry of Industry and Supply for 1947-8 and 1948-9 are given below:

STORES PURCHASED THROUGH THE MINISTRY OF INDUSTRY AND SUPPLY

(In lakhs of rupees)

Year	Total value of stores purchased	Value of stores purchased through the Ministry of Industry and Supply	
		Amount	Percentage of total value of stores purchased
1	2	3	4
	Rs.	Rs.	Rs.
1947-8	81,59·10	12,10·20	14·83
1948-9	1,00,44·18	55,01·20	54·77

NOTE.—(i) The figures for 1947-8 exclude purchases made for the Railway Board and the Chief Mining Engineer, as also the value of purchases made by the Textile Commissioner, Bombay, Director-General, India Store Department, London, India Supply Mission, Washington and Coal Commissioner, on behalf of the Indian Government Railways.

(ii) The figures for 1948-9 exclude purchases made for the Railway Board and the Chief Mining Engineer, but include those made by the Director-General, India Store Department, London, India Supply Mission, Washington, Textile Commissioner, Bombay and the Director-General of Industries and Supplies, New Delhi, on behalf of the Indian Government Railways, as also the value of coal supplied by the

96. Value of stores purchases controlled by the Railway Board.—As in previous years, the Railway Board continued to purchase wagons for the Indian Government Railways. The value of the stores thus purchased during 1947-8 and 1948-9 by the Railway Board is given below:—

STORES PURCHASED BY THE RAILWAY BOARD

(In lakhs of rupees)

Year	Total value of stores purchased	Value of stores purchases made by the Railway Board	
		Amount	Percentage of the total value of stores purchased
1947-8	81,79 10	4,15 32	5 1
1948-9	1,00,44 18	3,04 77	3 0

The Board also exercised a great deal of control in the case of purchases of locomotives, boilers, rails and sleepers for Railways during the year under review; but the actual orders for these items are placed either by he Railways direct (as in the case of wooden and cast iron sleepers) or through the Ministry of Industry and Supply. The value of these items amounted to Rs 11,86 63 lakhs during 1948-9 as compared with 5,14 34 lakhs during 1947-8. The wagons referred to above were manufactured in India.

97. Value of cash purchases in North America, controlled by the Railway Board.—The total debits raised by the Deputy Accountant General, Industries and Supplies, New Delhi, against various Railways during the year 1948-9 on account of Cash Purchases in North America, controlled by the Railway Board amounted to Rs 11,52,53 079. These debits represent the cost of all purchases made in the U S A for Railways including the cost of rolling stock, spares rails, etc.

98. Direct purchases by Railways.—The value of direct purchases by Railways during 1948-9 amounted to Rs 42,38 lakhs as compared with Rs 65,31 lakhs during 1947-8.

99. Stores balances.—The statement below compares the total stores balances at the end of 1948-9 with those at the end of 1947-8. The figures are provisional as the accounts for the period ending 14 August 1947 have not so far been closed:

VALUE OF TOTAL STORES BALANCES ON RAILWAYS DURING 1947-8 AND 1948-9

(In lakhs of rupees)

Railways	1947-8	1948-9
Assam	20	1,05
Bengal Nagpur	1,23	4,97
Bombay, Baroda and Central India . .	3,06	3,08
Eastern Punjab .	3	1,33
East Indian	8,65	11,43
Great Indian Peninsula . .	6,16	7,31
Madras and Southern Mahratta .	1,05	2,47
South Indian	1,51	2,02
Oudh Tirhut	1,51	1,21
Other Indian Railways	91	1,59
TOTAL .	28,40	36,44

100. Timber supply situation.—On account of the general shortage of timber, the railways were unable to obtain supplies to their full requirements. The table below shows the quantity demanded and the quantity passed by the Railways during 1948-49

Supply of Timber [illegible] 1948-49

Year		[illegible]	Quantity passed [illegible]
II Quarter of 1948		[illegible]	2[illegible],115*
III 1948		[illegible]	[illegible]
IV 1948		[illegible]	15,1[illegible]*
I 1949		[illegible]	[illegible],22[illegible]
	Total	[illegible]	16,2[illegible]6

[illegible]

At the end of the year, the working [illegible] Railways (except Mysore State Railway) totalled 27,593 tons.

101. Steel supply situation.—During the year 1948-49 the demands of railways for steel excluding rails and fishplates [illegible] and civil engineering requirements amounted to approximately 250,000 tons. On account of the decline in indigenous [illegible] to railways during the year was [illegible] 75 per cent of the minimum requirements. [illegible] for essential repairs to permanent way, [illegible] and rolling-stock.

In view of the extensive [illegible] during the period of hostilities and the [illegible] and repairs that had accumulated thereby, the [illegible] insufficient to meet the full quantity required to [illegible] repair schedules. The out-turn from railway [illegible] adversely affected.

The unfavourable steel situation [illegible] for replacement of coaching vehicles and General Service Wagons [illegible] restricted and during the year under review it was [illegible] order for more than 3,300 General Service Wagons [illegible] representing 40 per cent of the capacity available in the country [illegible] building firms.

As regards rails and fishplates, supplies to Railways from indigenous sources during the year 1948-49 were restricted to the extent of 71,000 tons. This tonnage was quite insufficient to meet Railways' minimum demands for efficient maintenance of the permanent way and to provide for the essential requirements for projects of national importance. Orders to the extent of 100,000 tons of rails and fishplates were therefore placed on Canadian firms for import during the year.

102. Supply position of vital stores or components of first importance.

Indigenous stores.—The position with regard to the supply of indigenous stores for items necessitating the use of steel was unsatisfactory throughout the year under review on account of acute shortage. Shortage of indigenous capacity in respect of certain other items also affected the delivery position.

The vital items concerned were permanent way fittings, axles, steel castings (mainly on account of lack of machining capacity), and fabricated steel work for bridge and similar allied permanent way structures. Other items of importance where delays in supplies occurred were cast iron pipes, on account of shortage of indigenous capacity and fire-bricks. Difficulties in movement and transport of raw materials were stated to be the cause of the delayed supply of these items of stores.

Towards the end of the year, there were encouraging signs of accelerated supplies in the future on account of improvement in the general transport position and better prospects of availability of steel.

Imported Stores.—Delivery of railway stores and equipment from the United Kingdom during the year was affected by the acute shortage of steel in that country, where, in spite of the expanding output, the demand far exceeded the supply. This was especially the case in regard to the supply of laminated bearing springs as well as helical and volute springs, delivery dates quoted by manufacturers being postponed to 18 to 24 months from the date of the contract. The supply of locomotive boilers to the Indian Government Railways provided another instance of the unsatisfactory situation, deliveries in this case being quoted as far off as three years. Supplies of other vital items, such as, vacuum brake equipment, injectors and buffer, and buffer components for metre gauge stock, remained unsatisfactory throughout the year.

Supplies of boiler tubes, boiler plate, steel castings, crank axles and tyres, were, however, maintained at a fair level during the year.

The position was most disappointing in regard to supplies of coloured signal glass, and chains of all descriptions, such as lashing chains, binding chains, and sling chains. Orders placed as far back as five years ago remained uncompleted.

The year, however, ended more hopefully with encouraging signs of improvement in supplies for a number of commodities.

The following were the main items of stores which were outstanding at the close of 1948-9 against orders placed in previous years.

Serial No.	1944 indents	1945 indents	1946 indents	1947 indents	1948 indents
1	Chains	Chains	Chains	Chains	Spring
2	Boilers	Boilers	Boilers	Boilers	Boiler tubes
3	..	..	Lenses	Lenses	Glass sheets
4	..	..	Motor coaches and trailers	Motor coaches and trailers	Steel castings
5	..	..	Loco spares	Loco spares	Loco spares
6	..	..	Pumps		

The main items of importance on order from the United States of America were spare parts for the locomotives manufactured in North America now in service on the Indian Government Railways. There was no dearth of capacity for manufacturing these spare parts in the United States of America, but, at intervals, the scarcity of certain raw materials hampered manufacturers and affected the period of delivery quoted, which was normally from three to five months. During the year, shipment of spare parts against 1947 and 1948 demands by Railways were maintained at a steadily increasing level.

The supply position of stores *ex* Australia has been satisfactory and orders for only 42 items, mainly consisting of boiler gauge glasses, remain to be completed by that country.

103. Situation regarding theft of railway property.—No cases of thefts of stores and valuable materials from Stores Depots were reported to the Board in the course of 1948-9.

104. Water softening.—During the year under review one more water softening plant was installed by the Bombay, Baroda and Central India Railway.

CENTRAL STANDARDS OFFICE FOR RAILWAYS

105. Civil Engineering Wing.—Investigations were carried out and designs were prepared for a large number of civil engineering works including bridges, track, structures, signalling and interlocking and buildings.

The activities of the Standards Committees were considerably increased by the formation of two additional committees, namely, the Structures Standards Committee and the Building Standards Committee. There are now five Standard Committees in the Civil Wing, namely

(a) The Bridge Standards Committee.

(b) The Structures Standards Committee,

(c) The Track Standards Committee,

(d) The Signalling and Interlocking Standard Committee,

(e) The Building Standard Committee.

The more important items dealt with by these Committees are referred to separately.

The Civil Engineering Wing was consulted by the railways as well as by the Railway Board on a large number of technical problems and have had to undertake the functions of Consulting Engineers to the Railways in a small way. The work done by the Civil Engineering Research Wing is given in paragraph 107.

Considerable expansion in civil engineering research work in the near future has been arranged and necessary equipment ordered to enable the four branches, Structural, Track, Soil Mechanics and Building of Civil Engineering Research to tackle current railway problems. Amongst the more important equipment for which indents have been placed or for which arrangements are in hand are additional oscillograph equipment, [illegible] load fatigue testing machine, photo-elastic equipment, additional equipment for soil mechanics research and equipment for carrying out research in the latest techniques of reinforced concrete.

A revised Track Manual was issued.

The technique of pre-stressed concrete has been used for designing railway girders, and girders of 60' and 40' span have already been installed successfully. Exhaustive research is in hand on this type of construction. The introduction of pre-stressed concrete girders on the Railways will result in a considerable saving in steel. Designs of 100' Broad Gauge spans are in hand.

The Civil Engineering Wing participated actively in

(a) the preparation of an All India Code of Practice for reinforced concrete by the Indian Standards Institution,

(b) the preparation of a Code of Practice for Road Bridges by the Indian Roads Congress,

(c) the Weights and Measures Committee of the Indian Standards Institution,

(d) the preparation of Indian Standards Specifications for cement, reinforcement, etc., and

(e) the research meetings of the Central Board of Irrigation.

The more important designs undertaken during the year included:—

Bridges—

(a) Pre-stressed concrete girders for 60' and 40' M.G. M.L. Standard,

(b) Pre-stressed concrete girders for 40' and 100' B.G. M.L. Standard,

(c) Reinforced Concrete slab for 20 ft. M.G. M.L. Standard,

(d) 60 ft. span B.G. M.L. Standard (H.T.S. and welded types).

Structures—

(e) Road-rail deck bridge using aluminium alloys.

(f) Rigid frame 30 ft. goods shed,

(g) Flood lighting tower 100 ft. high.

Track—

(*h*) 1 in 12 and 1 in 8½ left turnout with spring crossing (without helical springs) and 21 ft and 15'-6" over-riding switch for 90R B.S.S. respectively,

(*i*) Pre-stressed R C sleepers B G Class C,

(*j*) Two way keys bearing plate anti-creep cast iron for B G 90R,

(*k*) 6" deep section of 90 lb, 60 lb, and 50 lb rails and fishplates

Signalling and Interlocking—

(*l*) Signal arms and adjusting sleeves

General—

(*m*) Publication of Indian Railways Standard Code of Practice for the construction of reinforced concrete structures for the storage of liquids,

(*n*) Issue of a revised edition of the Steel Structures Code and a number of correction slips to the Reinforced Concrete Code and Steel Structures Code.

106. Mechanical Engineering.

(*A*) *Locomotive Design and Standardization*.—During the year, the more important drawing and design work undertaken included the following items:—

(*a*) arrangement of radial arm spring controlled front truck with friction slides for new broad gauge locomotives,

(*b*) tentative diagrams of WL, WS, YG, YL, YM YP and YS Class locomotives for forwarding to C M.Es with a view to obtaining comments before finalization,

(*c*) preparation of draft Particular Specifications for WG, WS, YG, YL, YM, YP and YS Class locomotives,

(*d*) preparation of Master lists of Spares for WP, WG, YB, YP, YG, ZB, and ZE Class locomotives,

(*e*) arrangement drawings for spring loaded intermediate draw and buffing gear between engine and tender with draw bar passing through the centre of the rubbing blocks for WP, WG YP, YG Class locomotives,

(*f*) preparation of designs of Emblems for Ministers' and Railway Board's Saloons and R M S. vans,

(*g*) limit of wear sizes and application of tyres to carrying wheels of MAWD Class locomotives,

(*h*) preparation of statement of electrodes in use on railways

(*i*) preparation of Tables regarding rationalization of locomotive power and particulars of future broad and metre gauge locomotives,

(*j*) arrangement drawing for application of asbestos insulating material to clothing sheets in connection with the agenda for the I.R.F C,

(*k*) arrangement drawing to permit provision of secondary air from firebox sides below the level of the firebrick arch in connection with the agenda of the I R.F.C.,

(*l*) normal work of the locomotive drawings office in keeping the standard drawings of locomotives up to date.

(B) *Carriage and Wagon Design and Standardization*.—The more important Carriage and Wagon drawings and design work undertaken during the year, are given below:—

(a) design of M.G. cattle and goods wagons;
(b) interior layout and profile of B.G. and M.G. coaches;
(c) interchangeability of M.G. couplers (I.R.S., I.R.C.A., U.S.A.);
(d) modifications to Watson type bogie;
(e) preliminary design of 12,000 gallons bogie tank wagon, BTP type;
(f) the normal work of the Carriage and Wagon drawing office in maintaining Standard Drawings of Rolling Stock.

RESEARCH

107. Civil Engineering Research.

(A) *Structural Research*.

(a) *Tests on Batten Plated Struts*.—The Indian Railways Standard Code of Practice for the design of railway bridges contains regulations for the design of latticed struts, but no rules were laid down for the design of batten plated struts. Welding is being increasingly employed in fabricating steel structures as thereby considerable economy in the use of steel is obtained.

Investigations and tests were carried out on 16 half scale columns, the size of which corresponded to the proposed 150 ft. girder spans for the Mahi Bridge on the Bombay, Baroda and Central India Railway. As a result of these tests, rules for the design of struts with welded batten plates were framed.

(b) *Tests on trough sleepers on bridges*.—Trough sleepers for bridges have been designed but before standardizing, tests were carried out on two spans, one fitted with isolated trough sleepers and the other with continuous troughing. A few condemned wagons loaded to capacity were derailed and stresses in the troughs measured.

From these tests it is found that isolated troughs can be more easily removed and repaired and as they are also lighter they are preferable to continuous troughing.

(c) *Prestressed concrete girder spans*.—Owing to shortage of steel, Railways could not obtain steel girder spans for maintenance works as well as for construction. Investigations have been carried out for substituting prestressed concrete girders in place of steel girders and arrangements were made for supplying prestressed concrete girder spans for the Assam Rail Link Project. Before finally standardizing the prestressed concrete girder spans, it was considered advisable to ascertain the factor of safety and the strength of the prestressed concrete girders under overloading, and a 40-ft. span is, therefore, being constructed at Kalyan on the Great Indian Peninsula Railway, for testing.

(B) *Track research*.

All the available experimental data are inadequate to determine the optimum sleeper density for various types of sleepers. In order to determine the minimum sleeper density with every type of sleeper and also to ascertain the lateral strength of track with different types and varying densities of sleepers, test lengths of track have been provided. These test lengths will also enable experiments to be carried out to ascertain the buckling factor of the long welded rail.

(C) *Building research*.—

With a view to economy in construction, exhaustive experiments were carried out on (*i*) stabilized pise and adobe construction, (*ii*) precast unreinforced roof section, (*iii*) waterproof plasters and (*iv*) an economical "Chula".

(D) *Soil Mechanics research.*

With the equipment now available, all the basic properties including shear strength of soil can be determined and stability of banks and cuttings and the bearing capacity of foundation can be ascertained

Investigation of the stability of Pier Nos 2 and 3 of the Malaviya Bridge at Kashi has been carried out.

Sub-soil conditions for the proposed Ganga Bridge at Mokameh have been investigated at site and the bearing capacity of the sub-soil has been estimated from the experience on other constructions with similar conditions.

108. Mechanical Engineering Research.

(A) *Locomotive Research*

The Dynamometer Car was engaged on a series of trials with XE locomotives on the East Indian Railway in order to determine the effect of the fitting of mechanical stokers on firing rates, combustion efficiency, boiler output, and overall boiler efficiency Trials were made with Standard 'HT' and Berkeley 'B' type stokers and much useful data were collected on the comparative performance of these two designs

Comparative injector trials were carried out with the object of determining the capacity of the different types of injectors at different boiler pressures and feed temperatures The data collected included useful information on the thermal efficiencies of the injectors The trials covered two proprietary designs, *viz*, the Gresham & Craven RCWL Injector and the Nathan Injector, in addition to the Standard IRS Simplex Injector An improved design of the IRS Simplex Injector was worked out for the purpose of these trials.

The Research staff were also engaged in the preparation of a number of technical notes for the second meeting of the Indian Railway Fuel Committee The work done included a detailed analysis of the relation between firing rates and locomotive performance with the object of providing railways with a basis for scientific trip rationing of coal for passenger and goods services

Oscillation trials were carried out on AWD (CWD) locomotives in order to measure the flange forces set up at high speeds of operation and to study the effect of varying degrees of lateral bind truck control on the stability of the locomotives From the result of the flange force measurements and the riding tests the maximum permissible speed for these locomotives was fixed at 45 m p h

Oscillation trials of WM locomotives were conducted to ascertain their riding qualities From the results of the tests, it was found that these locomotives run very steadily at all speeds up to 65 m p h and that the flange forces do not exceed 41 per cent of the axle loading In consequence thes[e] locomotives have been permitted to run at unrestricted speeds

Oscillograph Car trials were also carried out with the prototype W[P] locomotives in order to investigate the propensity of these engines to excessi[ve] vertical oscillation at the rear end The cause of the excessive vertic[al] oscillation was found to be an unusually large pitching couple and the int[er-] drawgear was redesigned in order to reduce the latter The modified int[er-] drawgear has since been fitted on the WP locomotives and has been fou[nd] to be entirely successful in eliminating the objectionable oscillations

(B) *Carriage and Wagon Research* Stress tests of the new design[...] light-weight wagons were carried out Designs were modified in the [...] of the data collected and further tests will be done next year before the de[...]

(C) *Fuel Research.*—During the year it was decided to set up a [illegible] research unit for fuel research. Up till now, the Dynamometer Car has had to be used for all fuel research even when the test did not require the use of the dynamometer. The equipment being provided in the Fuel Research Car, will enable measurements to be taken, without the necessity of taking out the Dynamometer Car, of fuel consumption, [illegible], flue gas analysis, pressure and draught, [illegible], superheat, [illegible] and exhaust temperatures, and speed.

The Fuel Research Unit is expected to [illegible] when it will be possible to release the Dynamometer Car for [illegible] important work and to make more rapid progress with the [illegible].

In view of the vital importance of [illegible] the fuel bill of the Indian Railways, amounting now to over Rs. 22 [illegible], approximately two and a half times the pre-war figure, it [illegible] decided to set up the Indian Railway Fuel Committee. The Committee [illegible] with the task of co-ordinating all railway fuel research, [illegible] methods for locomotive fuels and fuel [illegible] the properties and behaviour of different [illegible] train services, the preparation of [illegible] for locomotive use, the rationalization of the [illegible] policy, research into the efficient [illegible] of coal [illegible] coal, the determination of the relationship between [illegible] power ratings and fuel firing rates for [illegible] and different coals in order to provide a [illegible] the efficiency and economic suitability [illegible] for particular services, the [illegible] Railways and investigation of [illegible] on the economic possibilities of coal beneficiation [illegible] of utilizing coal dust for locomotive [illegible] of the ancillary problems such as the transport and [illegible] research into the possibilities of different [illegible] of effective control on 'leakage' of fuel [illegible] the Locomotive Standards Committee with a view to [illegible] existing locomotives and design of new locomotives [illegible] fuel economy, research into the economic possibilities of [illegible] alternative fuels and the study of alternative forms of traction [illegible] traction and electric traction.

(D) *Metallurgical and Chemical Research.*—Several trials of jointing compositions, including those received from the Council of Scientific and Industrial Research, were carried out. Research in connection with the composition devised by the Central Standards Office has progressed nearly to the final stage. The latest modification of the C. S. O. formula promises success in performance.

The British Cast Iron Research Association and the British Non-Ferrous Metals Research Association were consulted on various subjects relating to foundry problems on Indian Railways. A number of trials on sprayed metals were carried out. Research on Copper Silicon bronzes, which was held in abeyance, has been taken up and planned.

109. Indian Railway Fuel Committee.—The Indian Railway Fuel Committee is composed of one representative from each of the Class I Railways and representatives of the Fuel Research Institute, the Coal Commissioner and the Chief Mining Engineer, in addition to the Research Officer (Mechanical), who is the *ex-officio* Secretary. The Committee held two meetings during the year. The deliberations covered a wide range and the subjects discussed included the following:—

(a) examination of locomotive coals being supplied to the different Railways for similar services and the experience of suitability.

(b) rationalization of the coal grading and coal supply policy;

(c) evolution of a standard specification for locomotive coals;

(d) consideration of ways and means for implementing the decision to replace gradually the supplies of coking coals to Railways by non coking coals;

(e) investigation of the possibility of using pulverized fuel in locomotive fireboxes,

(f) investigation of the possible economies resulting from the use of Feed Water Heaters, Kylchap type front ends, devices for the introduction of secondary air into the fireboxes and boiler lagging;

(g) survey of the use of coal on Railways for other than locomotive purposes and the possibility of effecting economies,

(h) examination of the fuel statistics of the Railways with the object of investigating causes of abnormal consumption and suggesting remedies, and

(i) consideration of methods for increasing the yield of such by products as cinder and smoke box char, including the question of their utilization.

The Committee were of the opinion that the existing Fuel Control Organizations on many Railways were inadequate and recommended that each Railway must have a permanent organization under the control of a Fuel Officer of at least Senior Scale rank assisted by a junior officer or a Senior Fuel Inspector The Committee laid down a model organization suitable for a railway with 1,000 locomotives on the line and suggested that the existing Fuel Control Organizations be expanded to conform to this scale. A great deal of progress has been made in planning and suggesting means for effecting economy in fuel consumption, but as most of the schemes are yet in the developmental stage, it is not possible to assess the results so far achieved It is, however, hoped that as and when these schemes are finalized in course of time, considerable savings will accrue

The principal factors which continue to contribute to higher consumption are—

(a) inferior quality of coal supply,

(b) abnormal increase in the number of supplying collieries, whereby drivers are continually being issued with different varieties of coal resulting in inefficient handling and firing due to the impossibility of training engine crews in the proper firing technique applicable to the particular variety of coal,

(c) large number of locomotives of obsolete design which have had to be retained in service beyond the limit of economic life owing to difficulty in the supply of new locomotives;

(d) difficulties in the efficient maintenance of the locomotives in service on account of the scarcity of materials and spare parts

These difficulties are being gradually overcome. With regard to the first two factors, the Indian Railway Fuel Committee endeavoured to impress upon the Coal Commissioner the necessity for the early introduction of a rational distribution scheme and of tighter control on the quality of coal supplied. There are, however, difficulties in reducing the number of supplying collieries as, in the opinion of the Coal Commissioner, this would seriously jeopardise the interests of the smaller collieries With regard to the last two factors, the situation is improving with the placing in service of new locomotives and a progressive easing of the supply situation regarding materials and spare parts.

As regards the implementation of the recommendations of the Indian Coalfields Committee, 1946, for the gradual elimination of coking coals from Railway supplies and their conservation for metallurgical purposes, the new designs of standard locomotives evolved in the [illegible] are equipped with fireboxes suitable for burning low grade semi-coking and non-coking coals. As the number of the new locomotives in service progressively increases, the requirement of coking coals will be automatically reduced and finally eliminated.

The Ministry of Industry and Supply have been advised that the Railways were prepared to [illegible] per cent of their requirement of [illegible] A and B Grades provided adequate quantities of [illegible] were assured to them. The whole question [illegible] by a Committee appointed by Government in the Ministry of Industry and Supply.

STANDARDIZATION COMMITTEES

110. Civil Engineering Wing.—Reference is made in the following paragraphs to the type of [illegible] dealt with by the various Standards Committees. [illegible], but only a few of the more [illegible].

Bridge Standards Committee.

(a) Design of [illegible] scientific method [illegible].

(b) Design of prestressed reinforced concrete [illegible] to main line loadings [illegible] obtain [illegible].

(c) Design of aluminium deck [illegible] rail deck bridges.

(d) Design of prestressed concrete [illegible] main line loading.

Structures Standards Committee.

(a) Construction of structures in aluminium [illegible] with its inherent lightness, comparative freedom from corrosion, adequate strength, etc.

(b) Consideration of welded types of structure with a view to effecting economy in steel by adopting rigid frame design methods.

(c) Rapid and economic method of preparing structures for painting by flame cleaning.

(d) Rationalized and economical method of proportioning concrete with a view to increasing the strength and effecting economy.

Track Standards Committee.

(a) Design of prestressed concrete sleepers in order to overcome the shortage in metal and timber sleepers.

(b) Evolution of stronger and lighter fish plate sections with a view to effecting considerable economy in steel in track. 80 lb. rails with a strength nearly equivalent to those of existing 90 lb. rails and fish plates have been evolved, and similarly, 50 lb. rails and fish plates with strength nearly equal to those of existing 60 lb. rails and fish plates have been evolved in the Central Standards Office.

(c) Consideration of the length of welded rails particularly with regard to buckling of tracks.

(d) Revision of the existing nomenclature for density of sleepers with a view to making it more natural

(e) Consideration of mechanical track appliances with a view to increasing the efficiency in maintenance and reducing labour costs

Signalling and Interlocking Standards Committee—

(a) Standardization of multiple aspect signal fittings.

(b) Consideration of double wire signalling and signal arms

(c) Enlarging the sphere of the Signalling and Interlocking Standards Committee and change in its designation

(d) Standardization of electrical signalling components.

Building Standards Committee

(a) Method of effecting economy in building materials and alternative method of construction

(b) Introduction of modular co-ordination in building construction with a view to mass production and standardization

(c) Methods of effecting economy in maintenance of buildings

III. Mechanical Engineering Wing.

Locomotive Standards Committee.—The Locomotive Standards Committee met in December 1948 and dealt with points which had arisen since 1 April 1948, in connection with locomotive designs and fittings. Recommendations were made on the following important subjects

(a) All-welded ashpan design in two pieces independent of each other, the top portion being secured to the foundation ring and the bottom carried in a horizontal plate between frames This design of ashpan simplifies construction and has the added advantage of being able to remove the boiler without having to drop the ashpan

(b) Design of superheater header having superheat and saturated compartments in separate units This design was proposed with a view to overcoming cracks experienced in partition walls, but it was considered that the design of superheater in one unit which incorporates air passages between the saturated and superheat passages to act as insulating spaces to preclude the possibility of cracking of the compartment walls, on the lines of the Superheater Company's 'A. M' type was an improvement on the proposal and was adopted

(c) Introduction of spark arrestor screen in smoke boxes in conjunction with ash ejector apparatus These fitments have been introduced with a view to reducing fire hazard in coaching stock caused by sparks emitted from the locomotive entering compartments

(d) Design of the future standard metre gauge passenger and goods locomotives, 4-6-2 type 'YP' class and 2-8-2 type 'YG' class respectively A pilot order of 20-'YP' class locomotives and a bulk order for 150-'YG' class locomotives has been placed in North America and deliveries are expected to commence at the end of 1949

(e) Acceptance of, departures from I R S practice in designs and features specified for the bulk orders of the 'WP' and 'WG' and 'YP' and 'YG' class locomotives on order Adverse reports on the performance of certain designs and features subsequent to their adoption led to alternative designs and features, which have been known to give satisfactory results, being specified in the Particular Specifications for the locomotives in question.

Since this constituted a departure from [illegible] policy, it was necessary to obtain and record the Committee's acceptance to the [illegible] departure being introduced.

(*f*) Apparatus for detection of flaws and [illegible] of [illegible] welds of a suitable type for use in Indian Railway Workshops. The provision of such apparatus in Workshops was considered desirable by the Committee and the report of a Special Officer deputed to [illegible] types available on the market will be considered at the [illegible].

Results of trials of experimental [illegible] were [illegible]. It was considered that further experience [illegible] indicated before [illegible] conclusions could be reached in the case of 13 trials and [illegible] these trials be continued. Ten trials were closed [illegible] were adopted as the future standard. One new [illegible] to determine whether mechanical [illegible] where firing capacity [illegible].

Brief particulars of fittings and [illegible] adopted as a result of satisfactory trials, are given below.

(*a*) Injector steam valve [illegible] embodying certain improved features [illegible] designed to permit of [illegible] valve spindle.

(*b*) Solid cast iron [illegible] than [illegible] adopted in [illegible] centre with [illegible] steel [illegible].

(*c*) Perforations for grease [illegible] coupling rod [illegible] supply. The arrangement of perforations adopted, which although providing [illegible] effectively distributes the [illegible] over the whole length of the bearing. The arrangement provides for 15 [illegible] holes in the big end bearing, [illegible] of the same circumference as another. And by drilling the holes on a system of staggered spirals the surface of the bearing is completely covered by grease feeds at each revolution.

The location of grease nipples and method of grease supply has been left to the discretion of the designer as it was not considered desirable to express a preference for any particular location which may handicap the designer.

112. Carriage & Wagon Standards Committee.—The Carriage and Wagon Standards Committee held its 28th Meeting in February 1949 and dealt with an agenda of 61 items. Among the subjects considered by the Committee were:—

(*a*) an examination of designs for the proposed all-steel lightweight coaches of 11′-8″ width for the Broad Gauge system and 9′-4″ width for the Metre Gauge system, with particular reference to the floor plans,

(*b*) a study on the adoption of aluminium in carriage and wagon construction,

(*c*) the interior panelling of coaches using resin-bonded plywoods and laminated plastic panels to obtain maximum reflectivity combined with a pleasing decor,

(*d*) laying down standards for the interior furnishing and amenities in various classes of compartments and lavatories consequent on the reclassification of passenger accommodation enforced since 1 January 1949,

(*e*) the thermal insulation of all steel coach bodies and petrol tanks,

(*f*) a study of lightweight bogie designs proposed for the future 11'-8" coaches,

(*g*) an examination of problems attached to the provision of drinking water facilities in Class III coaches,

(*h*) consideration of machine tool requirements with regard to the maintenance of future all steel coaches

113. Electrical Standards Committee.—The Electrical Standards Committee met during the year A resume of the main items dealt with by the meeting is given below

(*a*) The question of adopting a standard system of air conditioning for broad and metre gauge stock was discussed and, in addition to this subject, the design of ice activated refrigerator vans, domestic type refrigerators for railway coaching stock, and domestic type air conditioning equipment was also discussed

(*b*) A decision was taken with regard to the adoption of the Single Battery system as the future Indian Railway Standard as against the old Double Battery system which has been the standard for many years In addition to this, a decision was taken with regard to the modifications to the existing standard coach wiring diagram to provide for greater protection in the electrical circuit and to provide facilities for attention during service An up to-date load schedule for electrical equipment was also discussed

(*c*) The Committee approved of the adoption of fluorescent lighting for coaching stock, but preferred to carry out trials with various types of equipment before a standard could be decided upon Coupled with this subject was the question of the preparation of an All-India Specification to cover fluorescent lighting fittings for use in offices, station platforms, roads, etc

(*d*) A recommendation was made with regard to the purchase from abroad of train lighting belting as opposed to the present supplies of indigenous belting which are not up to the required specification. It was also decided that the existing type of Walker belt fastener for train lighting belts was satisfactory

(*e*) The Committee recommended that an organization be set up for the manufacture of train lighting and other electrical spare parts in the country

114. Specifications Standards Committee.—The Standing Committee on Standards and Specifications met during the year A resumé of the main items dealt with by the meeting is given below

(*a*) A decision was taken to recommend the purchase of cotton or cotton-jute paulins for railway purposes as a result of trials carried out over a period of years

(*b*) A consolidated statement of brands and grades of electrodes was considered with a view to modifying the "I. and S. Guide to Indentors" on this subject A recommendation was made for the preparation of I R S Specification for bare and coated electrodes

(c) The revision of I. R. S. Specifications was given consideration. Particular attention was paid to the revision of specification No. R 6 and R 32 for Carriage [illegible] frames and Wagons, and Steam Locomotive [illegible] and Tenders, respectively.

(d) Recommendations were made for the preparation of I. R. S. Specifications for [illegible], carriage cleaning compounds, [illegible] roof [illegible] material, waterproof garments, [illegible], and for the modification to the [illegible] specification for brass wire.

(e) The adoption of [illegible] in place of the nine grades catered for by the old specification was approved.

115. General.

(a) *Inspection of Boilers [illegible].* The periodical inspection records of the [illegible], showing the progress in the out turn and [illegible] of [illegible] and 'YB' Boilers to [illegible] to be regularly received in the [illegible] to detect any departure from the [illegible] accepted boiler practice.

Loco Part [illegible]. [illegible] the scheme for the preparation of [illegible] for the U. S. A. and Canada built locomotives [illegible] I. R. S. [illegible]. The organization for [illegible] Indian and [illegible] (East [illegible]) [illegible] not yet been [illegible].

(b) The following detail [illegible] specifications were prepared:

Locomotives.

1 'WG' Broad gauge.
2 'YP' }
'YB' } Metre gauge.
3 'YG' }
4 'ZB' }
5. 'ZE' } Narrow gauge.

Standardization of fire bricks.—With the object of standardizing fire bricks, *i.e.*, to introduce standard bricks and arches where possible and to reduce the number of non standard bricks to the minimum, an officer on special duty has been appointed to visit all Indian Government Railways. His report is expected to be completed by November 1949.

(c) *Fuel Economy.*—The Indian Railway Fuel Committee was formed during the year as part of the Fuel Economy drive which was intensified and vigorously pursued. The efforts in this direction met with a serious set-back from the latter half of 1946-7 on account of the unsettled conditions in the country owing to general labour unrest, communal disturbances and implementation of the Partition Scheme, resulting in operational inefficiency and consequent increase in coal consumption during the last two years.

With conditions gradually returning to normal, a study of the various causes responsible for increased consumption was felt necessary. The subject of fuel economy was thoroughly discussed in all its various aspects, and the Railway Administrations were instructed to give effect to the recommendations of the Committee as far as practicable.

(d) The normal work of keeping Indian Railway Standard Specifications up to date continued throughout the year. One new Indian Railway Standard Specification was issued and 18 Indian Railway Standard Specifications were revised and reissued.

The following particular Specifications for broad and metre gauge Indian Railway Standard rolling-stock and details were prepared :-

(a) Bogie coaching underframes (broad gauge)

(b) Bogie coaching underframes (metre gauge).

(c) 4-wheeled underframes (broad gauge)

(d) *4-wheeled underframes (metre gauge)*

(e) BR Type Wagons

(f) TPR Type Patrol Tanks.

(g) MBVG Type Brake Vans

(h) MC Type Wagon

(i) Dismantling, Modifying and Rebuilding metre gauge, U S A Bogie Wagons

(e) The Central Standards Office was represented on the meeting called by Director General of Industries and Supplies to discuss the requirements of oil and greases of Railways

The Central Standards Office represented the Ministry of Railways—Railway Board, on the following committees of other technical bodies

1. Central Boilers Board

2. General Council of Indian Standards Institution

3 Engineering Division Council of the Indian Standards Institution

4 Chemical Division Council of the Indian Standards Institution

5. Patent Advisory Committee of the Industry and Supply Ministry

6 Internal Combustion Engines Research Committee of the Council of Scientific and Industrial Research

7. Development Committee of the Non-Ferrous Metals Industry functioning under the Director General of Industries and Supplies.

8. Twenty Sectional and Sub-committees of the Indian Standards Institution, such as, Abrasive, Basic ferrous and non-ferrous metals, Belting and rubber products, Cement Drawing Heavy chemicals, Lubricants, Paint and allied products Refractories, Refrigerators, Timber product, Aluminium and its alloys, etc

Special Committees—

9. Special Committee on Weights and Measures

10 Bridge Committee of the Indian Road Congress

11. Research Committee of the Central Board of Irrigation

12. National Committee for India for the International Conference on Soil Mechanics

13 Committee for Standardization of Methods and Apparata for Soil Mechanics.

CHAPTER VII

STAFF

116. Number of Staff.—The total number of employees (permanent and temporary) on all Indian Railways and in the office of the Railway Board and other offices subordinate thereto, excluding staff employed on construction, at the end of the year 1948-9 was 912,723 as compared with 900,497 at the end of 1947-8. The total route mileage at the end of the year was 33,861.

117. Cost of Staff.—The following statement shows the number and cost of all staff, gazetted and non-gazetted, permanent and temporary, open line and construction, employed on Class I Railways during the years 1947-8 and 1948-9. Labour employed by contractors is not included.

NUMBER AND COST OF STAFF ON CLASS I RAILWAYS DURING 1947-8 AND 1948-9

Railway	Year	Number of staff on 31st March — Open line: Gazetted officers	Open line: Non-gazetted employees	Open line: Total	Construction: Gazetted officers	Construction: Non-gazetted employees	Construction: Total	[illegible]	Cost of staff during the year ending 31st March†: Gazetted officers	Non-gazetted employees	Total	Total [illegible]
1	2	3	4	5	6	7	8	9	10	11	12	13
									Rs.	Rs.	Rs.	Rs.
…n	1948		[illegible]	[illegible]					[illegible]	[illegible]	[illegible]	[illegible]
	1949	19	31,393	32,422					[illegible]	[illegible]	[illegible]	2,70,51,303
…ner State	1948	[illegible]	[illegible]	[illegible]					[illegible]	[illegible]	[illegible]	[illegible]
	1949	24	5,542	5,566					[illegible]	[illegible]	[illegible]	[illegible]
…al Nagpur	1948	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
	1949	306	103,339	103,645		71	71	1	[illegible]	[illegible]	[illegible]	9,81,92,853
…bay, Baroda and Central India	1948	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
	1949	161	57,055	57,216					[illegible]	[illegible]	[illegible]	[illegible]
… Indian	1948	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
	1949	309	219,944	220,254	31	1,274	1,755		[illegible]	[illegible]	21,19,28,942	[illegible]
…ern Punjab	1948	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
	1949	83	45,273	45,356	1	46	47		[illegible]	[illegible]	[illegible]	[illegible]
…at Indian Peninsula	1948	[illegible]	[illegible]	157,[illegible]	.				[illegible]	[illegible]	[illegible]	[illegible]
	1949	229	162,734	163,013	.			2	[illegible]	[illegible]	[illegible]	[illegible]
…hpur	1948	41	[illegible]	[illegible]	.			1	[illegible]	[illegible]	[illegible]	[illegible]
	1949	33	6,422	6,455	..		.	.	[illegible]	[illegible]	[illegible]	[illegible]
…ras and Southern Mahratta	1948	158	77,381	[illegible]	.		.	.	[illegible]	[illegible]	[illegible]	[illegible]
	1949	147	73,918	74,065	..			.	37,77,073	[illegible]	[illegible]	[illegible]
…ore State	1948	43	9,023	[illegible]					[illegible]	[illegible]	[illegible]	[illegible]
	1949	52	9,778	9,830				.	[illegible]	[illegible]	67,32,759	[illegible]
…am's State	1948	81	20,094	20,175	4	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
	1949	78	19,213	19,291	4	705	309	.	[illegible]	[illegible]	[illegible]	[illegible]
…th Tirhut	1948	133	*50,226	*50,350	..	..	..	1	[illegible]	[illegible]	[illegible]	[illegible]
	1949	152	54,370	54,522	..	..	.	.	10,60,670	[illegible]	4,57,29,782	[illegible]
…th Indian	1948	136	53,355	53,491	..	..	..		[illegible]	[illegible]	[illegible]	[illegible]
	1949	143	55,766	55,909	.	..	..	.	22,02,425	5,41,81,885	5,63,84,510	[illegible]
…lway Clearing Accounts Office	1948	6	1,033	1,039	..	..	..	1	[illegible]	[illegible]	[illegible]	[illegible]
	1949	3	1,962	1,965	..	..	..	1	75,498	29,57,819	30,63,317	[illegible]
TOTAL	1948	1,701	867,146	869,147	34	4,319	4,353	5	*3,10,87,178	[illegible]	[illegible]	[illegible]
	1949	1,751	877,799	879,550	30	1,599	1,635	4	3,17,01,941	79,33,76,469	82,50,78,410	82,52,25,607

*Represents revised figures for 1947-8 due to changes made by the Railway Administrations in the figures published last year.

† The figures of cost represent pay, allowances, passages, provident fund contribution and gratuity.

‡ Represents figures for whole system.

A comparison of the figures for 1948-9 with those for the previous year shows that the total number of staff employed on the open line of Indian Government Railways increased by 13,381 during the year, while the number of construction staff decreased by 2,789.

The total cost of staff including that of staff on loan from the Indian Audit and Accounts Service increased by Rs. 15,32,42,308 during the year. Increases were recorded both in the number and cost of staff on Indian Government Railways.

The increase in the number and/or cost, as the case may be, of staff during 1948-9 is mainly due to the following reasons:

(1) implementation of the recommendations of the Central Pay Commission including the reclassification of skilled and other workers and the introduction of revised rates for payment of allowances to running staff and the payment of arrears to the staff as a result of these recommendations,

(2) setting up of organizations on the Railways to carry out the Award given by the Hon'ble Mr. Justice G. S. Rajadhyaksha in the trade dispute between the nine Indian Government Railway Administrations and their respective employees,

(3) the exercise of option by railway staff in favour of cash dearness allowance in full in place of dearness allowance *plus* grainshop concessions previously allowed to the staff, as well as the grant of lump sum amounts to some of the staff following the acceptance of the recommendations of the Railway Grainshop Enquiry Committee,

(4) the increase in the rates of dearness allowance,

(5) reorganization of the Cash and Pay arrangements on the Bombay, Baroda and Central India and the Eastern Punjab Railways, and

(6) the creation of certain new posts on the Railways and promotion of staff.

118. Direct recruitment to the Superior Services.—The number of appointments made to the Superior State Railway Services by direct recruitment during the year was 107. Details by departments are summarized below:

Department	Total
Engineering	29
Accounts	6
Establishment	9
Transportation, Traffic and Commercial	29
Transportation (Power) and Mechanical Engineering	31
Other Departments	1
TOTAL	107

119. Promotions.

(a) *Superior Services.*—Eight promotions were made during the year from Class II and Class III Services. These promotions were against vacancies earmarked either for the year 1946-7 or for 1947-8, which could not be filled during the respective years.

(b) *Class II Services.*—Eleven promotions were made to the Class II Service in the various departments.

120. Railways and Labour.

All-India Railwaymen's Federation. The relations between the Railway Administrations and labour continued to be generally cordial during the year, though the period was marked by considerable activities on the part of the All-India Railwaymen's Federation in pressing the demands of the staff.

The All India Railwaymen's Federation held its annual convention at Lillooah on 30 and 31 August 1948 at which they passed three resolutions. Resolution No. I demanded increase in cash dearness allowance to correspond with the rise in the cost of living index and protested against the curtailment in the Railway grainshop concessions. Resolution No. II referred to certain demands relating to the recommendations of the Central Pay Commission which had previously been put forward by the Federation and gave the Ministry of Railways time up to 31 October 1948 for the settlement of those demands failing which the taking of a ballot for a general strike was to be considered by the General Council. Resolution No. III requested Government to take over the administration of non Government Railways and the introduction of uniformity in their conditions of service and scales of pay.

The All India Railwaymen's Federation next held a meeting of their General Council at Nagpur on 24 and 25 November 1948 at which the Council passed certain resolutions. One of these resolutions complained against the alleged unsatisfactory fixation of cash dearness allowance and the curtailment of relief in kind. The other resolution reiterating the resolutions passed at the Lillooah Convention and complaining that Government had rejected their demands, resolved that immediate steps should be taken by affiliated unions for a strike ballot on the issues referred to in the Resolutions passed at the earlier Annual Convention held at Lillooah and that, in the event of the ballot being favourable, a notice be issued on the Railway Board to the effect that a general strike would take place by the middle of February 1949. The resolution, however, concluded by stating that the Federation were prepared for an honourable settlement.

After examining these resolutions, Government considered that many of the misunderstandings could be cleared up by a personal discussion with the Federation. The President of the All India Railwaymen's Federation was accordingly invited for a meeting with the Hon'ble Minister for Transport and Railways at Bombay on 4 January 1949 at which the following were the main subjects discussed :-

(*a*) grainshop facilities;

(*b*) dearness allowance;

(*c*) calling off of the strike ballot,

(*d*) anomalies arising out of the application of the recommendations of the Central Pay Commission to railway workers;

(*e*) setting up of a joint machinery for dealing with the points in dispute between the management and workers; and

(*f*) constitution of a committee for examining the anomalies referred to in item (*d*) above.

After the discussion, it was decided that the talks should be resumed later. Discussions between the Ministry of Railways and the representatives of the All-India Railwaymen's Federation were accordingly resumed in Delhi on 18 January 1949 and continued on 20, 21, 26 January 1949, 12 and 14 February 1949.

As a result of the decisions reached at these discussions, the All-India Railwaymen's Federation decided at their meeting held at Dinapore on 16 and 17 February 1949 to stay action on the results of the ballot for a strike. Some Unions on the East Indian, Oudh Tirhut, Eastern Punjab, Bombay, Baroda and Central India and South Indian Railways which were dominated

[illegible] decision of the Federation [illegible] however, gave notices for a [illegible] though there were a few instances of attempted sabotage.

Towards the close of the period under review, proposals for the setting up of a *Joint Advisory Committee for Railways*, consisting of representatives of the Railway Board and of railway labour, for dealing with points in dispute between the management and workers were being finalized.

Strike on the South Indian Railway. Labour trouble commenced on the South Indian Railway during the last week of April 1948 when engine crews working in certain links refused to work trains after completion of 8 hours duty. The trouble spread gradually when a token strike for 24 hours from midnight to midnight of 9 and 10 May 1948 was declared by the South Indian Railway Labour Union. Among loco shed and running staff about 3,000 employees out of a total of 8,700 joined the strike. Out of a total of 6,500 workmen employed in the workshops of the Railway at Golden Rock, only about 700 struck work. As regards other departments only a few Class IV staff joined the strike. The token strike thus proved a failure. Normal train services were maintained, except that train services were restricted on the section of the Railway affected by the strike. During the strike a few attempts at sabotage were made at certain places on the system such as by removing fish plates or otherwise tampering with the track. The situation returned almost to normal by 13 May 1948 except at a few stations. The strike, which was illegal, however continued in a confused manner, the strikers returning to work at some places and even joining the strike at other places until 6 June 1948, on which date all strikers except a few returned to duty and conditions of working returned to normal all over the system.

121. Grainshops.—In paragraph 121 of the last report, reference was made to the appointment by the Government of India in February 1948 of the Railway Grainshops Enquiry Committee with Shri Mohanlal Saxena as Chairman, and Shri K. Santhanam and Shri Khandubhai Kasanji Desai as Members and the terms of reference to it. It was also stated that the Committee commenced its work on 4 March 1948.

The Committee toured over Indian Government Railways, visiting grainshops, studying conditions first hand and consulting representatives of most railway unions and many individual railway workers as well as railway officials. The Committee submitted its Report to the Government of India in June 1948.

The main recommendations of the Committee are summarized below :—

(1) Each individual railway employee should be permitted to opt for the entire dearness allowance in cash as payable to other Central Government employees or for the continuance of the present cash dearness allowance in accordance with Railway Rules combined with the grainshop concessions in the revised form as stated below. Such option should, however, be exercised within two months of the acceptance of the Report by the Government and should be final and irrevocable, if it is in favour of the full cash dearness allowance. On the Eastern Punjab Railway, however, all grainshops were to be closed.

(2) A single lump sum payment on the following scale should be given to those workers drawing a basic pay of Rs. 50 per month or less, who opt for the full cash dearness allowance, if option is exercised by them within the stipulated period of two months as referred to in item (1) above.

	Rs
'X' Area—Kanpur, Bombay and Calcutta	120
'A' Area—Towns having a population of 250,000 each	90
'B' Area—Towns having a population of 50,000 or more but less than 250,000	60
'C' Area—All other localities	30

(3) That the grainshops should be retained for those who do not exercise the option as a temporary expedient, but should be restricted to the supply of five essential articles, namely, cereals, pulses, cooking oils, salt and matches.

(4) Except in areas where there is statutory rationing, railway workers should be free to take their entire cereal ration in wheat or rice of medium quality, the scale of ration for every worker being increased from 12 ozs. to 16 ozs. per day, which is the existing standard ration for a heavy manual worker. The scale of ration of other members of the worker's family, however, should remain at 12 ozs. per day as at present.

(5) The selling prices of the commodities should be uniform all over India and should be as follows:

	Rs.	as.	ps.
(a) Cereals—wheat and rice per seer	0	2	6
(b) Pulses per seer	0	4	0
(c) Cooking oils per seer	0	8	0
(d) Salt per seer	0	1	6
(e) Matches per box	0	0	6

(6) That the sale of commodities at concessional rates should be confined to railway staff drawing a basic pay of less than Rs. 250, and grainshops should discontinue the practice of supplying commodities to other staff at non-concessional rates. Casual labour should be paid at market rates and all new recruits to railway service should be paid their dearness allowance entirely in cash at the scale prescribed for other Central Government employees and should be excluded from the privilege of the grainshop concessions.

(7) Procurement of wheat and rice, instead of being made by the Railways themselves in the open market should be undertaken by the Ministry of Food of the Government of India, while the arrangement for the supply of matches should be made by the Railway Board direct from match factories to the Railways. The procurement of pulses, cooking oils, and salt should be through open tenders called by Joint Purchasing Committees of Railways consisting of Grainshops Officers, Accounts Officers and two representatives of Labour Unions.

(8) Participation of staff in grainshop management should be secured by the setting up of Committees attached to each grainshop, consisting mainly of representatives of railway workers.

(9) The setting up of Cooperative Stores by Railway workers should be encouraged.

A copy of the Report of the Railway Grainshops Enquiry Committee was sent to the Indian Railway Enquiry Committee for their views. The latter suggested that the grainshop organization should be wound up and the staff compensated for the loss of the measure of relief in kind then received by them. The Committee also made certain other recommendations.

After examination of the recommendations contained in the report and the views of the Indian Railway Enquiry Committee thereon, the Government of India in their Resolution No. E(F) 48 (GR 2(43), dated 28 October 1948 promulgated their decision to accept the recommendations of the Railway Grainshops Enquiry Committee subject to the following modifications:—

(a) The quantity of the cereal ration should be in conformity with Provincial Rationing Rules, but the difference between the quantity of 16 ozs. per day for the worker and 12 ozs. per day for each adult member of his family and the quantities allowed by the rules should be made up by an addition in the pulse ration equal to half this difference.

(*b*) The grainshops should be continued on the Eastern Punjab Railway also on the same terms as on other railways, and the staff of the Railway be permitted to exercise individual option in favour of the entire dearness allowance in cash or for the continuance of relief in cash and kind, in the same way as employees on other Indian Government Railways.

(*c*) The decision of Government regarding the recommendation in respect of the setting up of co-operative stores by the Railway employees be deferred pending its further examination.

With a view to assisting the staff concerned, orders were issued that the staff residing in rationed as well as non-rationed areas should both be permitted to draw cereal ration only at the retail controlled prices fixed by the Civil Authority for that Area or controlled prices fixed for the contiguous rationed or controlled areas at the scale of 12 ozs. per adult worker and his dependent and 4 ozs. additional for the classified heavy manual worker or the scale prescribed by the Provincial/State Government concerned.

From a review of the position made, it was found that out of 786,575 employees eligible for exercising option, only 363,760 had opted to continue under the Railway Grainshops, the remaining 422,815 having opted out of the grainshops.

The statistics given below indicate the principal activities of the grainshops organization :—

	In March 1949
(1) No. of shops functioning—	
Static	448
Mobile	141
TOTAL	589
(2) No. of ration card holders dealing at the shops—	
At concessional rates	413,000
At controlled rates	200,000
TOTAL	613,000
(3) Principal articles sold during the year (in maunds)—	
(*a*) Cereals	9,068,000
(*b*) Pulses	3,070,000
(*c*) All cooking media	817,000
(4) Cost of purchases of all grainshop articles during the year	Rs. 40,03,78,000*
(5) Total amount realized on sales	Rs. 17,57,72,000*
(6) Losses during the year—	
(*a*) Direct loss (on purchases)	Rs. 25,34,74,000*
(*b*) Indirect loss (on staff, freight, etc.)	Rs. 3,15,67,000*

		In March 1949 Rs.	as.	p.
(7) Average cost of purchases per employee		29	2	0
(8) Expenditure incurred by railways per employee—				
(*a*) On sales		21	6	0
(*b*) On all overheads		3	11	0
(9) Average relief enjoyed per employee	Zone X	24	9	0
	Zone A	23	13	0
	Zone B	23	1	0
	Zone C	25	13	0

* Provisional figures.

122. Canteens.—Reference was made in paragraph 122 of the last report to the progress achieved by railways in the establishment of canteens for the workers with a view to improving their working conditions by the provision of inexpensive and nourishing meals or snacks at their places of work. Twenty-six more such canteens were opened on the Indian Government Railways, bringing the total number of canteens at the close of the year under review to 52. The number of staff who patronized the canteens was on an average 53,000 per day. Most of the canteens served tea and other beverages and light snacks, while in a few full meals were also made available.

123. Dearness allowance.—In paragraph 123 of the last report the scales of the dearness allowance, as they stood at the close of the year 1947-48 were given. During the year under review, following Government's decision to grant an increase in the rates of dearness allowance applicable to Central Government employees, the increased scales stated below were sanctioned in the case of railway servants drawing a basic pay not exceeding Rs 250 per month with effect from 1 January 1949.

I. FOR RAILWAY STAFF ON THE CENTRAL PAY COMMISSION RATES OF DEARNESS ALLOWANCE

Pay	Dearness allowance per mensem
Rs	Rs.
Up to Rs 50	35
51—100	45
101—150	50
151—200	55
201—250	60

II. FOR RAILWAY STAFF ON RAILWAY RATES OF DEARNESS ALLOWANCE AND ELIGIBLE FOR GRAINSHOP CONCESSIONS

17½ per cent of pay *plus* Rs 5 per month subject to the following minima.

	Rs
X Area—Pay below Rs 40	23
,, Rs 40 and above	25
A Area—Pay below Rs 40	22
,, Rs 40 and above	24
B Area—Pay below Rs 40	19
,, Rs 40 and above	21
C Area—Pay below Rs 40	17
,, Rs. 40 and above	19

124. Railway staff and the War.—In paragraph 124 of the last report it was stated that on 31 December 1947 the number of Railway staff on deputation to the Ministry of Defence was one gazetted and 441 non-gazetted. During the year under review the release of railwaymen amounted to 62, leaving the number of railway staff on deputation with the Defence Ministry on 31 December 1948 as one gazetted and 379 non-gazetted. An appreciable improvement in the release of railwaymen is expected in the ensuing year.

125. Railway Service Commissions.—The four Railway Service Commissions at Madras, Calcutta, Bombay and Lucknow were mainly engaged in recruiting Class III staff for Railways and in advising on the appeals received from Class III staff which lie to the General Managers. The reports called for from the Railways and Service Commissions regarding the working of the system under which the Service Commissions advised on appeals were being received towards the end of the year. In addition to the work already handled, the East Indian and Oudh Tirhut Railways Joint Service Commission, Lucknow, was entrusted with the recruitment of Class III staff required by the Eastern Punjab Railway to implement the Adjudicator's Award.

The Indian Railway Enquiry Committee had recommended the abolition of the Commission at Lucknow and reduction in the strength of Members in each Commission. The recommendations are receiving the consideration of the Government.

126. Anti-Corruption Organization.—A vigorous and determined drive to combat bribery and corruption was continued during the year. The existing arrangements were reviewed and a scheme was evolved by the Railway Board with the object of coordinating the activities of the Special Police Establishment and those of Railway Administrations, and tightening up the executive machinery dealing with the detection and investigation of cases. The salient features of the scheme are —

(a) setting up of organizations to suit local conditions for the prevention, detection and departmental investigation of corruption on each railway,

(b) merely departmental or procedural irregularities resulting in preferential treatment to traders, travellers, contractors or firms should be ordinarily enquired into and disposed of by the Railway Administration concerned. If, however, there is reason to think that receipt of some monetary or other consideration can be established against the railway staff concerned with these irregularities, the cases should be handed over to the Special Police Establishment without delay

During the year, 297 cases were taken up by the Special Police Of these, 37 were sent up for trial in courts or before Tribunals, and conviction of 31 persons was secured. This brings the total number of cases so far taken up to 918. In 42 cases, the evidence was not considered sufficiently strong to secure conviction of the railway employees concerned in a court of law and these were referred to Railway Administrations for departmental action As a result three employees were discharged In order to keep the public and the general body of railway servants informed of the measures taken and the progress made in this behalf, press notes were issued from time to time, stating the number of convictions obtained, and emphasizing the fact that both the acceptor and tenderer of bribes were liable to punishment under the Law In addition, individual railways also continued to take action in this respect on their own initiative.

127. Labour Legislation.—The two Acts concerning railway servants were passed during the period under review namely (1) The Factories Act 1948, and (2) The Employees State Insurance Act 1948 The Factories Act 1948, mainly a consolidating and revising Act, was to come into force on 1 April 1949 The main provisions of this Act with which Railways were concerned were those relating to the exclusion of railway running sheds from its scope and the exemption of staff employed in workshops from the provisions of Chapter VIII thereof, relating to holidays with pay These provisions, while not depriving the staff concerned of any important and substantial privileges, were expected to result in administrative convenience

The Employees State Insurance Act provides for the grant to workers of sickness benefits, maternity benefits, and sick leave with pay subject to certain conditions. The question of the application of provisions of this Act to workmen employed on Indian Government Railways was under consideration during the year

128 Staff Councils.—It was mentioned in last year's report that Section 3 of the Industrial Disputes Act 1947, and Part V of the Industrial Disputes Rules 1947 had provided for the constitution of works committees consisting of representatives of employers and workmen in industrial establishments but that the question whether staff councils and similar bodies functioning on Railways might be allowed to continue in their existing form and constitution was under consideration This question was further examined during the year though no final decision was reached

129. Provision of quarters for railway staff. As stated in the last report, it was decided to construct four types of quarters for providing residential accommodation for the railway staff viz., *A*, *B*, *C*, and *D* of enclosed type having verandahs. The progress made on the construction of new quarters was, however, not quite satisfactory, and, in order to expedite their construction, greater discretion was given to railway administrations regarding the design and specifications of the quarters, on the condition that these quarters should be built as cheaply as possible, with a life of at least 15 years.

Further, in consideration of the acute shortage of building materials and the limited resources, and with a view to constructing as large a number of quarters as possible within the funds available, it was decided that no new *C* and *D* type quarters should be constructed at present. *B* type quarters were to be constructed, if in the opinion of the General Manager the provision of such quarters was inescapable. This enabled the concentration of available resources mainly on the construction of the lowest type of quarters, viz., *A* type for essential operating staff.

130. Progress in implementation of the Adjudicator's Award.—The Hon'ble Mr. Justice Rajadhyaksha's Award in the trade dispute between the nine Indian Government Railway Administrations and their respective workmen was published in May 1947. After consideration by Government, orders accepting the Award in respect of the first three terms of reference, viz., hours of work, periodic rest and leave reserves, were issued in June 1948. Instructions were issued to Railway Administrations to implement the Award in five phases at six months' interval commencing from 1 November 1948, the implementation in respect of Class IV staff being completed in two phases, Class III staff, except loco running staff, in three phases and loco. running staff in five phases. The Hours of Employment Regulations would also be revised to accord with the Award.

The number of additional staff required to implement the Award is roughly estimated to be nearly 100,000 men, involving a recurring cost of more than Rs. 10 crores per annum, besides a non recurring expenditure which may amount to more than Rs 40 crores for staff quarters, additional terminal facilities, etc. With a view to limiting the additional expenditure and to meet the Indian Railway Enquiry Committee's observation that surplus labour existed on Railways, the Railway Administrations were asked to carry out a job-analysis to assess the surplus personnel that could be absorbed in the implementation of the Award before recruitment was made from other sources. Provision has been made for absorption of the Indian nationals returning from Burma on grounds of alien nationality and of 15,000 men from among the displaced persons from Pakistan in vacancies arising out of the implementation of the Adjudicator's Award.

131. Progress in implementation of the Central Pay Commission's Recommendations.—In the course of the year, the prescribed scales were allotted to a large number of the remaining categories of staff, thereby bringing most of the posts on the Indian Government Railways into a single pay structure in accordance with the Central Pay Commission's recommendations.

A contentious point arose regarding the classification of artisan staff into skilled and semi-skilled. The wide disparity in practice amongst the Railways in this matter made it necessary to appoint a Tribunal on which Labour and Railways were represented under a neutral Chairman nominated by the Ministry of Labour. The Tribunal was charged with classifying artisans as skilled and semi-skilled, and evolving as far as possible, uniform designations for staff performing the same kind of duties. The Tribunal visited the different railways and reported on 28 May 1948. Orders accepting the report were issued immediately, and have since been implemented.

Some staff were discontented because of certain anomalies which had arisen out of the application of the Central Pay Commission's recommendations, and the Railways were directed to discuss the matter with the Unions affiliated to the All-India Railwaymen's Federation. Cases of hardship, if any, were also included within the scope of the points for discussion. The Unions raised a large number of points, of which about 80 were found to be cases of genuine hardship or anomalies. These were fully examined and dealt with. Others, which were mainly of the nature of demands for upgrading posts or revision of the scales, were also considered. The disposal of these cases formed the subject of discussion at meetings of the All-India Railwaymen's Federation with representatives of the Board from 10 to 12 August 1948.

Subsequently, the All-India Railwaymen's Federation in their Annual Convention held at Lillooah on 30 and 31 August 1948 raised *inter alia* some 20 points arising from the Central Pay Commission's recommendations which required attention.

The main issues raised by the Federation were discussed by the Hon'ble Minister for Railways with the President of the All India Railwaymen's Federation at meetings held in Bombay and later in New Delhi in January and February 1949. The more important issues discussed were—

(*a*) fixation in the prescribed scales of pre 1931 entrants in cases where their scales were lower than post-1931 scales,

(*b*) weightage for service rendered in the same category of service,

(*c*) constitution of an Anomalies Committee to consider cases of anomalies and hardships,

(*d*) extension of house-rent and compensatory allowances,

(*e*) confirmation of temporary staff,

(*f*) scales of pay for school staff;

(*g*) payment of casual labour,

(*h*) leave rules; and

(*i*) improvement of conditions of service of temporary staff

Examination of these issues was started immediately and was proceeding at the close of the year

Another Committee was appointed during July 1948 with Mr. D P Mathur as Chairman to review the prescribed basic scales for running staff and the existing running allowance and running allowance rules for appl ment Railways. The Report of the C who made a further improvement in the scales of pay and allowances, and orders were issued in December 1948 For the first time, uniform scales of pay and running allowances have been introduced on all the Indian Government Railways

132. Training of staff.—As referred to in paragraph 131 of last year's report, instructions were issued to the railways to establish training schools where they do not exist, or to effect modifications in the existing schools in order to meet present-day requirements. During the year, the recommendations of the Indian Railway Enquiry Committee 1947, contained in paragraphs 78-9 and 97 of their report, on the improvement of training facilities for railway staff, including unskilled staff, have been under consideration

133. Resettlement of demobilised ex-servicemen in reserved vacancies.—Recruitment of ex-servicemen against 70 per cent of the vacancies, which occurred during the period 1 June 1942 to 31 December 1945, and which were reserved for war service candidates to be recruited after the war, was completed during the year. A total of approximately 32,315 ex-servicemen have been recruited against these vacancies on the Indian Government Railways with the exception of the Assam Railway. No recruitment of ex-servicemen has been made on the Assam Railway, as the railway was formed as the result of the partition of India and it has not been possible, to determine what its share of war service vacancies existing on the ex-Bengal Assam Railway would have been and how many of these had already been filled prior to partition. The figure stated above does not include the number of ex-servicemen recruited by the pre-partitioned North Western and Bengal Assam Railways.

134. Activities of the Medical Department.—A brief account of the formation and activities of the Medical Department on Indian Government Railways was given in paragraph 133 of the last report. Consideration of the report on the reorganization and development of medical services on Indian Government Railways was still in progress, during the year, along with the general question of the policy to be adopted in regard to medical arrangements on railways in future

The activities of the Medical Department during the year continued to be well maintained On certain railways, there have been extensions to the existing hospitals, increase in the number of beds and additions to important equipments, such as X-ray apparatus and electro-medical apparatus. On many of the railways blood transfusion services were newly started, teams were formed and training was completed. Blood transfusion circulars and equipment were supplied to certain hospitals. Vitamin products were supplied free of cost to indigent railway patients on certain Railways. On almost all railways special attention was paid to the examination of school children.

During 1948-9, the rules for medical attendance and treatment for railway employees were liberalized to an appreciable extent. These concessions were extended to the families of railway servants on the same scale and conditions. Provision was made in the rules for free treatment of maternity cases, including pre-natal and post-natal treatment, in a number of recognized non-railway hospitals.

CHAPTER VIII

AMENITIES FOR PASSENGERS

135. General.—The provision of amenities for the comfort of passengers continued to receive the attention of railways. Certain amenities provided during the year on the principal railways are referred to in the following paragraphs.

136. New Class III Carriages.—190 new Class III carriages conforming to the approved standard design laid down in 1939 were constructed and placed in service as against 105 during the previous year.

137. Booking Offices and out-agencies.—Additional booking facilities for the greater convenience of passengers were provided at different stations as indicated below.

Bombay, Baroda and Central India Railway.—City booking offices were opened at Baroda City and Bombay (Mohamedali Road) during the year. Out agencies were also opened at Jawhar, Dharampur and Sharpur.

East Indian Railway.—Additional booking windows were opened at nine principal stations. Arrangements were also made for keeping booking offices at stations open for continuous booking at Bhagalpur, Dhanbad and Baidyanathdham. The city booking office at Patna was opened to ease pressure at Patna Junction. It has also been decided to reopen the out agencies at Lodi Sikandarabad, Dankaur, Jahangirabad, Khagaria, and Dumka.

Eastern Punjab Railway.—With a view to providing additional booking facilities for the public, the existing booking agencies at Meerut City, Saharanpur and Delhi (Quazi Hauz) have been allowed to deal with foreign traffic and the working hours at Connaught Place, New Delhi, have also been extended. To prevent overcrowding at passenger booking windows, arrangements were made to open booking offices at road side stations at least one hour before the arrival of each train instead of one half of an hour as heretofore. Special booking windows were opened at Delhi for the convenience of passengers travelling by all classes for out-of-the way places and ladies travelling in Class III.

Madras and Southern Mahratta Railway.—A new booking office was opened at Belgaum during the year for booking passengers only. Special booking windows were arranged at certain stations for the issue of Class III tickets to passengers travelling beyond 300 miles.

Oudh Tirhut Railway.—Booking offices were opened at Muzaffarpur and Patna for booking passengers only. In order to serve important markets in Kumaon hills, where the medium of transport mostly consists of motor vehicles, the out-agencies at Almora, Nainital, Rani Khet, and Bhowali remained open for goods and parcels traffic. The Nainital out-agency was transferred from Kumaon Motor Owners Union Ltd. to the U. P. Government Roadways.

South Indian Railway.—Five new out-agencies were opened during the year. The festival booking office at Madura Junction was converted into a regular booking office to relieve the congestion in the existing booking office.

138. Waiting rooms and waiting halls.—During the year waiting rooms and waiting halls were added and improvements effected to the existing station accommodation for passengers at a number of stations.

Beng[illegible] ...commodation for Class III lady pas[illegible] ...s for new waiting [illegible] ...iagbahara, Haridaspur, under construction, will shortly be available for the use of passengers.

East Indian Railway.—One Class III waiting room was provided at Bhabua Road. Improvements were effected in waiting rooms and waiting halls at Allahabad, Mirzapur, Bindhachal, Calcutta (Main Station), Faizabad and Gaya.

Great Indian Peninsula Railway. The Class I waiting room was reopened at Majhgawan on 1 April 1948. At Dadar, mosaic flooring was provided in the ladies waiting room. In the Class III waiting hall at Poona, arrangements for bathing and washing were improved.

Madras and Southern Mahratta Railway. A new Class III waiting hall for ladies was provided during the year at Nuzvid. Twenty four additional waiting rooms were provided at six stations on the broad gauge and one on the metre gauge.

Oudh Tirhut Railway.—Separate waiting rooms for Class II ladies and gents were opened at Bahraich and Mankapur during 1948-9.

South Indian Railway. At Coonoor, flush out arrangements, extra water closet, ladies dressing room and a commodious ladies waiting room were provided in the waiting rooms for Class I and Class II passengers. Improvements were also carried out in the ladies and gents retiring and waiting rooms at Tirupattur, Polur, Villupuram, Ootacamund, Salem Junction and Egmore (Madras).

139. Additional platforms and sheds. A number of works on improvements to, or extension of, existing platforms, and provision of additional facilities were either completed or commenced during the year. They are briefly referred to in the following paragraphs.

On the Bombay, Baroda and Central India Railway, work was taken in hand on extension of platforms at Surat, Broach, Bulsar, Anklesvar, Navsari, Virar, Kharsalia, Dohad, Shamgarh, Gangapur City, Bharatpur, Kotah, Lakheri, Bayana, Sawai Madhopur, Shri Chhatrapur and Bijalpur stations. Extension of waiting sheds was also taken up at Shri Mahabirji, Bayana, and Bhawani Mandi stations on the same railway.

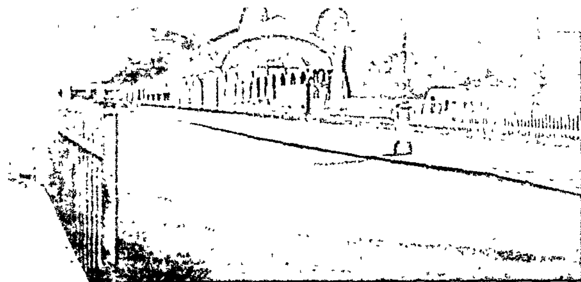
On the East Indian Railway, a second rail level platform was provided at Goshainganj. The Up and Down platforms were raised to high level at Khusrupur, and passenger platforms were lengthened at Mirzapur, Bindhachal, Firozabad, Naini and Bindki Road. At Bhadohi Habibwala, Fazalpur and Chandok, rail level platforms were provided. Raised platforms were provided at Japla, Garhwa Road, Saiyed Raja, Kudra and Khusrupur.

On the Great Indian Peninsula Railway, covered platforms above rail level were provided at Sirhi Itara, Kathara, Sambhua, Pathara, Ghatampur, Hamirpur Road, Yamuna South Bank, Vithalvadi, Pagara, and Paricha stations. Side coverings for platforms were provided at King's Circle, and platforms Nos. 3 and 4 at Kalyan were topped with cement concrete.

The level of the platforms at six stations on the broad gauge section of the South Indian Railway was raised to 1'-6" above rail level. On the metre gauge, the platforms at Valadi and Uttamarkovil (train halt) were widened, and the platform at Tirumayiladi (train halt) was extended. Platforms at stations in the Madras Suburban area, Villupuram, Madura, Mettupalayam and Ootacamund were provided with concrete floors. Shellcrete flooring was provided in the second island platform at Coimbatore Junction in place of the old gravel flooring.

140. Reorganization of catering arrangements.—During the year, decision was taken to replace the former system of maintaining separate refreshment rooms on European and Indian styles, by vegetarian and non-vegetarian refreshment rooms. At major stations and junctions, it was decided to retain in addition restaurants on the Western style, suited to the requirements of overseas tourists.

Another important decision was the prohibition of the sale of alcoholic drinks on railway premises and on dining cars.



MADRAS EGMORE STATION AS SEEN FROM OUTSIDE SHOWING THE FLUORESCENT LAMPS, OVERBRIDGE, ETC

REINFORCED CONCRETE PLATFORM REFRESHMENT STALL AT ARKONAM, M & S M. RAILWAY (COST RS. 2,600)

The food situation not having shown any material improvement, austerity meals continued to be served, but a strict check was maintained over the quality of food supplied and the cleanliness of preparations.

During the year, and, more particularly, towards its close, a number of suitable contractors from among displaced persons were awarded contracts for vending and catering. All possible avenues were being explored with the object of rehabilitating as large a number as possible of these people.

141. Supply of drinking water.—Arrangements for providing adequate supplies of drinking water for passengers continued to receive the attention of railways during the year. A new experiment of stationing about twenty watermen at carefully selected stopping stations along all important routes to permit supply of drinking water to passengers in all compartments is being tried during the ensuing summer. If this proves a success, it should be possible to reduce the number of watermen scattered all over the line.

142. Cleanliness of coaching stock and prevention of thefts of fittings.—As in the previous year, the question of cleanliness of coaching stock has continued to receive the active attention of Railways during the current year. The system of Resident Conductors was extended to all the Indian Government Railways. As the result of various steps taken, an improvement in the general cleanliness of stock has been effected. There has been a steady although small, reduction in the theft of fittings from coaching stock.

143. Steps taken to alleviate overcrowding in trains.—Several measures were taken during the year to reduce overcrowding in trains. These included bringing new coaching stock into service, and introducing additional trains of which a certain number was exclusively devoted to Class III passengers only. Passenger train services were strengthened by attaching extra carriages where available and within the permissible hauling capacity of the engine, and generally striving to attain the best possible utilization of all available coaching stock. In addition, the drive against ticketless travel was intensified. Social guides appointed to assist Class III passengers also helped towards reducing overcrowding by directing passengers from the more congested carriages to the less congested.

CHAPTER IX

ACCIDENTS

144. Major accidents.—The details of five major accidents, which occurred during the year, are referred to here.

On 30 April 1948, while No. 171 Up Goods was running between Sultangunge and Gangania stations on the Sahibganj Loop of the East Indian Railway No. 314 Down Workmen's train also entered the same block section from the opposite direction and collided head on with it The two leading coaches on 314 Down were smashed and the engines of both the trains suffered considerable damage Eight persons were killed and 17 injured. The approximate cost of damage to rolling stock was Rs 60,000

On 15 May 1948, No. 9 Up Dehra Dun Express, running between Chhota Ambona and Pradhankanta stations on the Grand Chord section of the East Indian Railway, was derailed The engine and four leading coaches capsized and the fifth and the sixth coaches were also derailed. Thirty-three persons were killed and 96 injured. The approximate cost of damage to rolling-stock was Rs. 53,800. The accident was caused by the track having been tampered with by some unknown persons

On 14 September 1948, No. 8 Down Nainital Express was running between Puranpur and Shahgarh stations on the Lucknow-Bareilly section of the Oudh Tirhut Railway, and No 49 Up Passenger also entered the same block section from the opposite direction and collided head-on with it The engines of both the trains were badly damaged. The three leading coaches on 8 Down and two leading coaches on 49 Up were derailed and damaged. Twenty-six persons were killed and 35 injured The approximate cost of damage to rolling-stock and permanent way was Rs 87,300

On 15 November 1948, while No 7 Up Passenger was running between Furkating and Kamarbandha Ali stations on the Lumding-Mariani (Main Line) section of the Assam Railway, its engine and four leading coaches were derailed. The engine capsized and the first, third and the fourth coaches were wrecked. Seventeen persons were killed and 40 injured. The approximate cost of damage to rolling-stock and permanent way was Rs. 52,000.

On 13 March 1949 a Down light engine was running between Pipraich and Bodarwar stations on the Savan-Gorakhpur Loop of the Oudh Tirhut Railway, and No. 63 Up Passenger also entered the same block section from the opposite direction and collided head-on with it The front portions of both the engines were damaged and the two leading coaches of 63 Up derailed and damaged. Nine persons were killed and 44 injured. The approximate cost of damage to rolling-stock and permanent way was Rs. 41,000.

145. Review of Accident Statistics.—The number of passengers, railway servants and other persons killed and injured in accidents on Indian Railways exclusive of casualties in railway workshops during 1948-9 as compared with the previous year may be seen from the accompanying table.

NUMBER OF PERSONS INJURED IN ACCIDENTS ON INDIAN RAILWAYS DURING 1947-8 AND 1948-9

Classification	Killed		Injured	
	1947-8*	1948-9*	1947-8*	1948-9*
A. Passengers				
(a) In accidents to trains, rolling stock, permanent way, etc.	299	88	703	363
(b) In accidents caused by movement of trains and railway vehicles exclusive of train accidents	607	621	2,979	3,113
(c) In accidents on railway premises in which the movement of trains, vehicles, etc., was not concerned	2	1	27	14
TOTAL .	908	710	3,709	3,490
B. Railway servants				
(a) In accidents to trains, rolling stock, permanent way, etc.	21	27	195	232
(b) In accidents caused by movement of trains and railway vehicles exclusive of train accidents	171	212	6,274	5,583
(c) In accidents on railway premises in which the movement of trains, vehicles, etc., was not concerned	21	28	15,602	15,008
TOTAL .	213	267	22,071	20,823
C. Other than passengers and railway servants				
(a) In accidents to trains, rolling stock, permanent way, etc.	39	102	111	161
(b) In accidents caused by movement of trains and railway vehicles exclusive of train accidents	[illegible]	3,553	1,463	1,677
(c) In accidents on railway premises in which the movement of trains, vehicles, etc., was not concerned	15	28	93	54
TOTAL .	3,012	3,683	1,667	1,892
GRAND TOTAL .	4,133	4,660	27,507	26,205

* See 'Note' at the end of this Chapter

Of the total of 4,660 persons killed 3,683 or 79 per cent were other than passengers and railway servants and, of this number, 2,970 were trespassers and 367 were reported to be suicides. Furthermore, 57 persons were killed on railway premises otherwise than during the movement of trains, vehicles, etc.

As compared with the previous year, the number of passengers injured in accidents caused by movement of trains and railway vehicles exclusive of train accidents increased by 134 due mainly to an increase in the number of passengers falling or jumping out of carriages during the running of trains. The number of railway servants injured in accidents to trains, rolling-stock and permanent way, etc., and killed in accidents caused by movement of trains and railway vehicles exclusive of train accidents increased as compared with the previous year by 57 and 41 respectively. These increases are made up of slight increases under different classes of accidents. The number of persons other than passengers and railway servants killed and injured in accidents caused by movement of trains and railway vehicles other than train accidents increased by 595 and 214 respectively, on account of an increase in the number trespassing on the line.

The following statement shows the number of passengers killed and injured in train accidents only, *i.e.*, collisions, derailments, etc., during the last five years as compared with the number carried.

Number of Passengers killed and injured in Train Accidents, 1944-5 to 1948-9

Year	Number of passengers carried (in millions)†	Killed		Injured	
		Number‡	Per million passengers carried	Number‡	Per million passengers carried
1944-5	971	34	0·04	132	0·14
1945-6	1,093	80	0·08	253	0·23
1946-7	1,139	93	0·08	340	0·29
1947-8*	1,014	298	0·29	721	0·69
1948-9*	1,180	55	0·05	260	0·22

* See 'Note' at the end of this Chapter.

† Represents total number carried on all railways.

‡ Excludes train wrecking and attempted train wrecking.

On Class I Railways, the number of railway servants killed and injured in accidents from the movement of trains, railway vehicles, etc., exclusive of train accidents, increased by 44 and 2,287 respectively. The main causes for these accidents are analysed in the following table.

Classification of Accidents to Railway Servants

Cause	Killed		Injured	
	1947-8	1948-9	1947-8	1948-9
(1) Misadventure or accidental	148	176	5,924	5,093
(2) Want of caution or misconduct on the part of the injured person.	14	29	248	332
(3) Want of caution or breach of rules, etc., on the part of servants other than the persons injured.	1	2	45	75
(4) Defective apparatus, appliance, etc., or want of sufficient appliances, safeguards, etc.	..	..	..	4
Total .	163	207	6,217	5,504

In the following statement are analysed the accidents which occurred during the last two years grouped under certain principal heads. A statement showing the accidents in greater detail for each railway will be found in Appendix D of Volume II of this Report.

Accidents during 1947-8 and 1948-9 classified under Principal Heads

	1947-8*	1948-9*
(1) Derailments not involving passenger trains . . .	7,959	8,177
(2) Accidents due to failure of engines owing to faulty material, workmanship and operation arising from the working of the running staff	3,314	4,672
(3) Running over cattle	4,292	4,509
(4) Accidents due to failure of couplings and drawgear .	2,122	2,296
(5) Accidents due to failure of engines owing to faulty material and workmanship in the Mechanical Department	2,056	1,646
(6) Fires in trains at stations or bridges	374	529

ACCIDENTS DURING 1947-8 AND 1948-9 CLASSIFIED UNDER PRINCIPAL HEADS —*contd.*

	1947-8*	1948-9*
(7) Accidents due to other rolling stock failures . .	206	322
(8) Derailments of passenger trains . .	204	235
(9) *Collision involving goods trains or goods vehicles* . .	122	253
(10) Accidents due to failure of axles	207	222
(11) Attempted train wrecking	161	169
(12) Broken rails	101	162
(13) Running over obstructions (other than those included under 'Train wrecking', 'Attempted train wrecking' and 'Trains running into road traffic at level crossings')	109	153
(14) Trains running into road traffic at level crossings .	192	145
(15) *Landslips*	82	126
(16) Train wrecking	42	31
(17) Flooding of permanent way	49	110
(18) Accidents due to failure of tyres and wheels . .	62	89
(19) Passenger trains running in the wrong direction through points but not derailed	13	72
(20) Collisions between light engines	73	63
(21) *Accidents due to failure of brake apparatus* . .	45	51
(22) Collisions involving passenger trains . .	49	34
(23) Failure of bridges, tunnels, etc . .	4	...
(24) Miscellaneous	412	535
TOTAL .	22,647	24,645

* *See 'Note' at the end of this Chapter*

The total number of accidents shows an increase of 2,011 or 8 2 per cent as compared with the previous year, against an increase in the total train miles of 6 4 per cent.

Derailments not involving passenger trains still account for the largest number of accidents, *i e.*, 33 per cent of the total The others in inverse order of importance are stated below :—

	Per cent
Accidents due to failure of engines owing to faulty material, workmanship and operation arising from the working of the running staff	10
Running over cattle	19
Accidents due to failure of couplings and drawgear . . .	9
Accidents due to failure of engines owing to faulty material and workmanship in the Mechanical Department	7
Fires in trains at stations or bridges	2
Accidents due to other rolling stock failures	1
Derailments of passenger trains	1
Collision involving goods trains or goods vehicles . . .	1
Accidents due to failure of axles . . .	1

Accidents in railway workshops accounted for the death of 9 and injuries to 17,331 railway servants, or a decrease of 7 in the former and an increase of 2,714 *in the latter as compared with the previous year*

Note—Figures for 1946-7 and for previous years, where given, are inclusive of the Bengal Assam and North Western Railways Figures for 1947-8 are *exclusive of the* Bengal Assam and North Western Railways but *inclusive* of Eastern Punjab and Assam Railways for the period 15 August 1947 to 31 March 1948 *only, while those for* 1948-9 are inclusive of Eastern Punjab and Assam Railways for the whole year

APPENDIX A

Resolution regarding the separation of Railway from General Finances, adopted by the Legislative Assembly on 20 September 1924 and the Convention Resolution of 1943.

'This Assembly recommends to the Governor General in Council that in order to relieve the general budget from the violent fluctuations caused by the incorporation therein of the railway estimates and to enable railways to carry out a continuous railway policy based on the necessity of making a definite return to general revenues on the *money expended by the State on Railways*

(1) The railway finances shall be separated from the general finances of the country and the general revenues shall receive a definite annual contribution from railways which shall be the first charge on the net receipts of railways

(2) The contribution shall be based on the capital at charge and working results of commercial lines, and shall be a sum equal to one per cent on the *capital at charge of commercial lines* (excluding capital contributed by companies and Indian States) at the end of the penultimate financial year *plus* one-fifth of any surplus profits remaining after payment of this fixed return, *subject to the condition that, if in any year railway revenues* are insufficient to provide the percentage of one per cent on the capital at charge surplus profits in the next or subsequent years will not be deemed to have accrued for purposes of division until such deficiency has been made good.

The interest on the capital at charge of, and the loss in working, strategic lines shall be borne by general revenues and shall consequently be deducted from the contribution so calculated in order to arrive at the net amount payable from railway to general revenues each year

(3) Any surplus remaining after this payment to general revenues shall be transferred to a railway reserve, provided that if the amount available for transfer to the railway reserve exceeds in any year three crores of rupees only two-thirds of the excess over three crores shall be transferred to the railway reserve and the remaining one-third shall accrue to general revenues.

(4) The railway reserve shall be used to secure the payment of the annual contribution to general revenues; to provide, if necessary, for arrears of depre*ciation and for writing down and writing off capital*; and to strengthen the financial position of railways in order that the services rendered to the public may be improved and rates may be reduced

(5) The railway administration shall be entitled, subject to such conditions as may be prescribed by the Government of India, to borrow temporarily from the capital or from the reserves for the purpose of meeting expenditure for which there is no provision or insufficient provision in the revenue budget subject to the obligation to make repayment of such borrowings out of the revenue budgets of subsequent years

(6) A Standing Finance Committee for Railways shall be constituted consisting of one nominated official member of the Legislative Assembly who should be chairman and eleven members elected by the Legislative Assembly from their body. The members of the Standing Finance Committee for Railways shall be *ex-officio* members of the Central Advisory *Council, which* shall consist, in addition, of not more than one further nominated official member, six non-official *members selected from a panel of eight* elected by the Council of State from their body and six non-official members selected *from a panel of eight elected* by the Legislative Assembly from their body

The Railway Department shall place the estimate of railway expenditure [illegible] *for* Railways on some date prior to [illegible] nd for grants for railways and shall, [illegible] diture programme revenue show the expenditure under a depreciation fund created as per the *new rules* for charge to capital and revenue

(7) The railway budget shall be presented to the Legislative Assembly if possible in advance of the general budget and separate days *shall be allotted for* its discussion, and the Member in charge of Railways shall then *make a general* statement on railway accounts and working. The expenditure proposed in the railway budget, including expenditure from the depreciation fund and the railway reserve, shall be placed before the Legislative Assembly in *the form of demands for grants*. The form the budget shall take after

separation, the detail it shall give and the number of demands for grants into which the total vote shall be divided shall be considered by the Railway Board in consultation with the proposed Standing Finance Committee for Railways with a view to the introduction of improvements in time for the next budget, if possible.

(8) These arrangements shall be subjected to periodic revision but shall be provisionally tried for at least three years.

(9) In view of the fact that the Assembly adheres to the resolution passed in February 1923, in favour of State management of Indian Railways, these arrangements shall hold good only so long as the East Indian Railway and the Great Indian Peninsula Railway and existing State-managed railways remain under State management. But if in spite of the Assembly's resolution above referred to Government should enter on any negotiations for the transfer of any of the above railways to Company management such negotiations shall not be concluded until facilities have been given for a discussion of the whole matter in the Assembly. If any contract for the transfer of any of the above railway to Company management is concluded against the advice of the Assembly, the Assembly will be at liberty to terminate the arrangements in this Resolution.

Apart from the above convention this Assembly further recommends

(i) that the railway services should be rapidly Indianized, and further that Indians should be appointed as Members of the Railway Board as early as possible, and

(ii) that the purchases of stores for the State Railways should be undertaken through the organization of the Stores Purchase Department of the Government of India.'

Convention Resolution of 1943.

The Legislative Assembly on 2 March 1943 passed the following resolution:—

'Whereas it has been found that the Convention, which was adopted under the Assembly Resolution, dated 20th September 1924, and which was intended to relieve the General Budget from violent fluctuations caused by the incorporation therein of the railway estimates and to enable railways to carry on a continuous railway policy based on the necessity of making a definite return to general revenues on the money expended by the State, has not achieved these objects, this Assembly recommends to the Governor General in Council, that:

(i) for the year 1942-3, a sum of Rs. 2,35,32 thousand shall be paid to general revenues over and above the current and arrear contribution due under the Convention,

(ii) from the 1st April 1943, so much of the Convention as provides for the contribution and allocation of surpluses to general revenues shall cease to be in force,

(iii) for the year 1943-4, the surplus on commercial lines shall be utilized to repay any outstanding loan from the depreciation fund and thereafter be divided 25 per cent to the railway reserve and 75 per cent to general revenues, the loss, if any, on strategic lines being recovered from General Revenues, and

(iv) for subsequent years and until a new convention is adopted by the Assembly, the allocation of the surplus on commercial lines between the railway reserve and general revenues shall be decided each year on consideration of the needs of the railways and general revenues, the loss, if any, on strategic lines being recovered from general revenues.'

APPENDIX B

MINISTRY OF RAILWAYS

Officers of the Ministry of Railways (*Railway Board*) and attached offices on 31 March 1949

The Hon'ble Shri N. Gopalaswami Ayyangar, Minister for Transport and Railways
The Hon'ble Shri K. Santhanam, Minister of State for Transport and Railways

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Railway Board

Shri K. C. Bakhle	Chief Commissioner of Railways
Shri P. M. Joseph	Financial Commissioner of Railways.
Dr. H. J. Nichols, D.Sc. (Lond.)	Member, Engineering
Shri F. C. Badhwar	Member, Staff
Shri V. P. Bhandarkar	Member, Transportation
Shri K. [illegible] M[illegible]	Director, Establishment
Shri A. A. Brown	Director, Traffic.
Shri P. C. Khanna	Director, Civil Engineering
Shri P. Menon	Director, Mechanical Engineering
Shri C. T. Venugopal	Director, Finance (Budget)
Shri K. Sadagopan	Director, Finance (Expenditure)
Shri S. S. Ramasubban	Secretary.
Shri G. Rama Rao	Deputy Secretary
Shri N. L. Das Gupta	Assistant Secretary
Shri M. E. Bartley	Joint Director, Establishment (Temporary)
Shri D. C. Bajaj	Joint Director, Civil Engineering (Temporary)
Shri G. [illegible]	Joint Director, Public Relations (Temporary).
Shri S. K. Gupta	Joint Director, Traffic (General) (Temporary)
Shri M. A. R. Sequeira	Joint Director, Finance (Temporary)
Shri Y. P. Kelkar	Joint Director, Adjudication (Temporary)
Shri K. L. Ghei	Deputy Director, Finance (Budget)
Shri K. S. Bhandari	Deputy Director, Finance (Establishment)
Shri P. Bhattacharji	Deputy Director, Mechanical I
Shri T. Venkatasubramania Ayyar	Deputy Director, Civil Engineering (Temporary)
Shri L. S. Mathur	Deputy Director, Telecommunications (Temporary)
Shri M. K. Krishnamachari	Deputy Director, Statistics (Temporary)
Shri P. Chakrabarty	Deputy Director, Mechanical, II (Temporary)
Shri Rajendra Dev	Deputy Director, *Traffic* (Transportation) (Temporary).
Shri B. R. Nanda	Deputy Director, Public *Relations*
Shri P. C. Kapur	Deputy Director, Mechanical III (Temporary)
Shri P. K. Madhava Menon	Deputy Director, Establishment
Shri K. S. Anantapadmanabhan	Deputy Director, Finance (Expenditure) (Temporary).
Shri *Surjan* Singh	Assistant Director, *Traffic* (Commercial) (Temporary).
Shri A. Hildreth	Assistant *Director*, Stores (Temporary).
Shri Haveli Ram	Assistant Director, Finance (Accounts) (Temporary)
Shri Tek Chand	Assistant Director, Traffic (Temporary)
Shri M. K. S. Aiyar	Assistant Director, Establishment, II (Temporary)
Shri S. L. Jaini	Assistant Director, Establishment, I (Temporary).

Attached Officers

Prof. L. A. Natesan	Economic Adviser (Temporary).
Shri P. L. Roy	Officer on Special Duty (Railway Territorial Units) (Temporary).
Shri Ranjit Singh	Officer on Special Duty (Tour) (Temporary).
Shri D. Sandilya	Officer on Special Duty (Grainshops) (Temporary).
Shri B. B. Mathur	Officer on Special Duty (Temporary).
Shri M. N. Chakravarti . . .	Officer on Special Duty (Temporary).

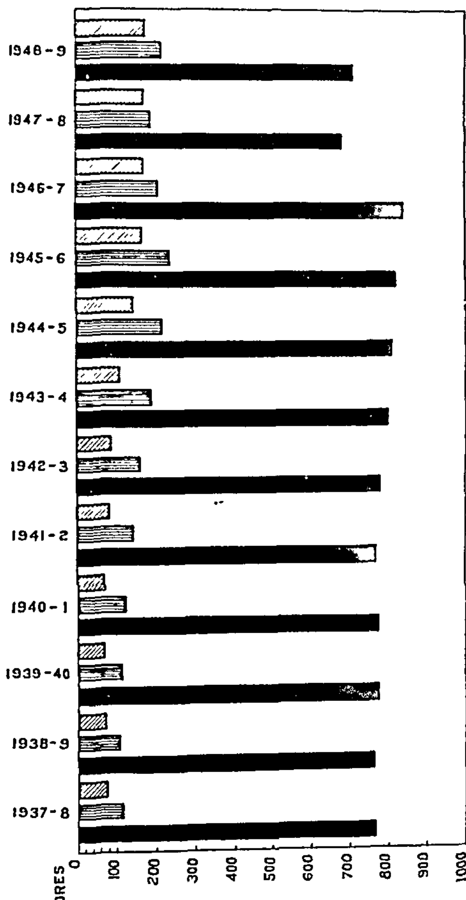
Central Standards Office for Railways

Shri B S Sindhu	Deputy Chief Controller of Standardization (Mechanical).
Shri K F. Antia	Deputy Chief Controller of Standardization (Civil).
Shri A K Gupta	Assistant Chief Controller of Standardization (Civil)
Shri S R Woodmore	Assistant Chief Controller of Standardization (Specification and Research).
Shri T E St Q Stewart . . .	Assistant Chief Controller of Standardization (Designs).
Shri A. Freitas	Assistant Chief Controller of Standardization (Loco. and Carriage).
Shri R H. G. da Cunha da Costa .	Research Officer (Mechanical).
Shri H. H Banerjee	Research Officer (Civil), II.
Shri V. Venkataramayya . . .	Research Officer (Civil), I.
Shri V. Kamlani . . .	Dynamometer Car Officer.
Shri R. G. Bhatawadekar . .	Research Officer (Chemical and Metallurgical).
Shri W. H. Anderson	Inspecting Officer for Railways (Tatanagar).
Shri M. S. Murti	Research Officer (Electrical).
Shri J. T. Wheatley . . .	Officer on Special Duty, Madras

GRAPHS

TOTAL CAPITAL AT CHARGE, TOTAL GROSS EARNINGS AND TOTAL WORKING EXPENSES OF INDIAN GOVERNMENT RAILWAY LINES

(EXCLUDING N. W. & B. A. RYS. DURING 1-4-47 TO 14-8-47, AND THE PAKISTAN RYS. THEREAFTER)

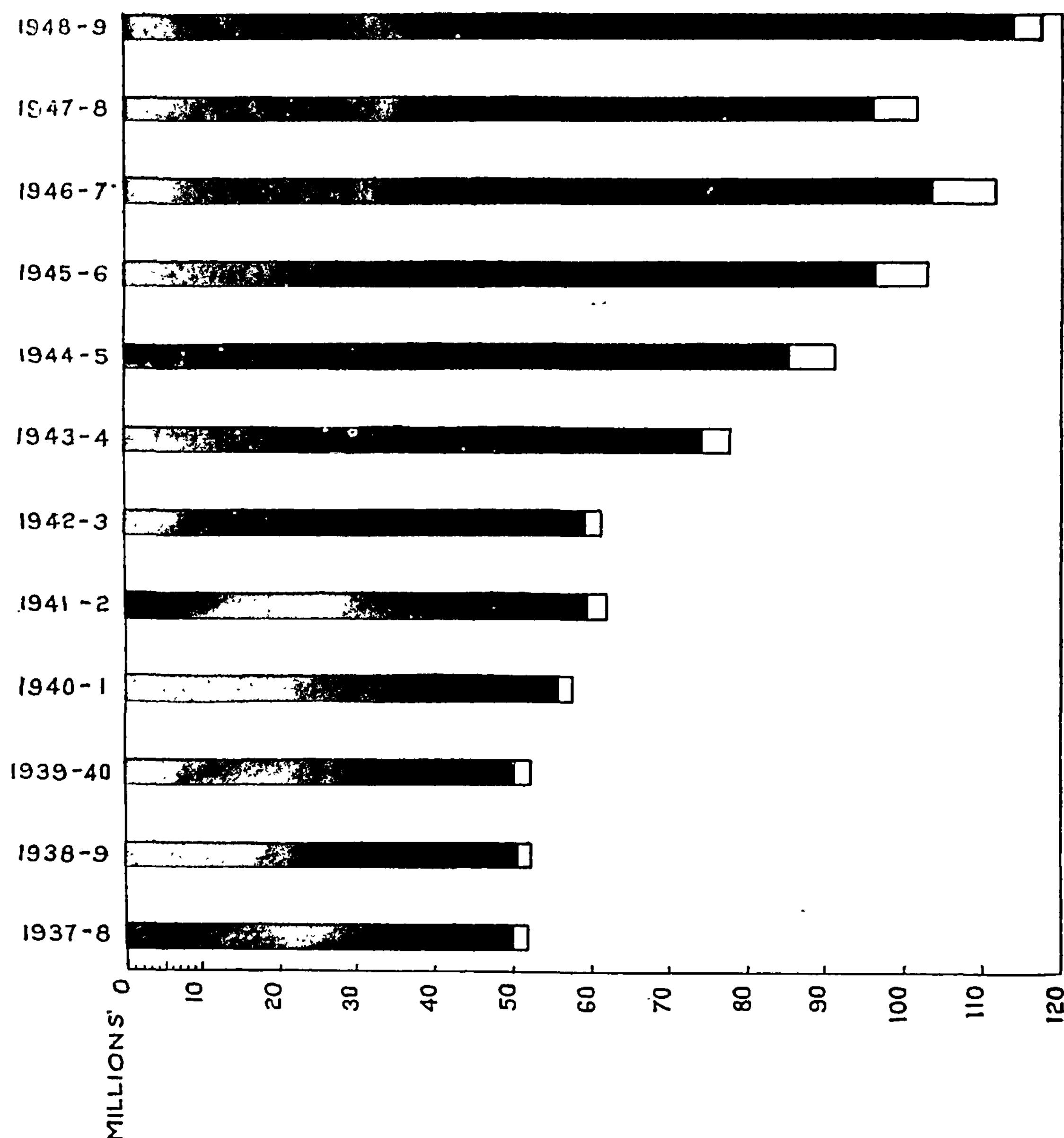


NUMBER OF PASSENGERS CARRIED INDIAN RAILWAYS

(EXCLUDING N. W. & B. A. RYS. DURING 1-4-47 TO 14-8-47, AND THE PAKISTAN RYS. THEREAFTER.)

Third class.

Upper classes.

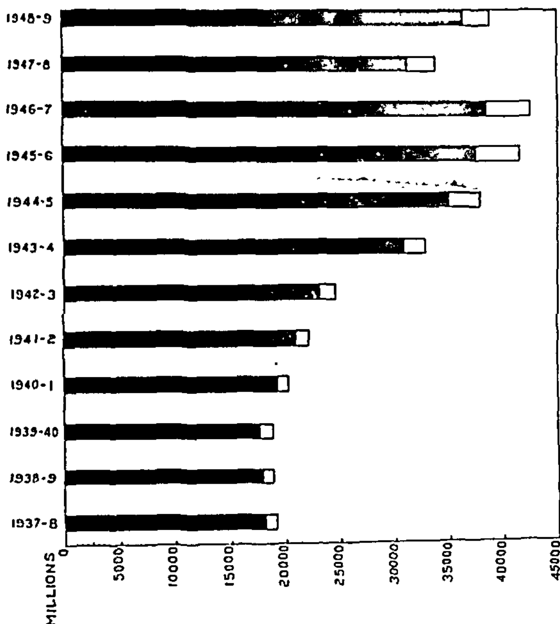


NUMBER OF PASSENGER MILES INDIAN RAILWAYS

(EXCLUDING N. W. & B. A. RYS DURING 1-4-47 TO 14-8-47, AND THE PAKISTAN RYS THEREAFTER)

Third class.

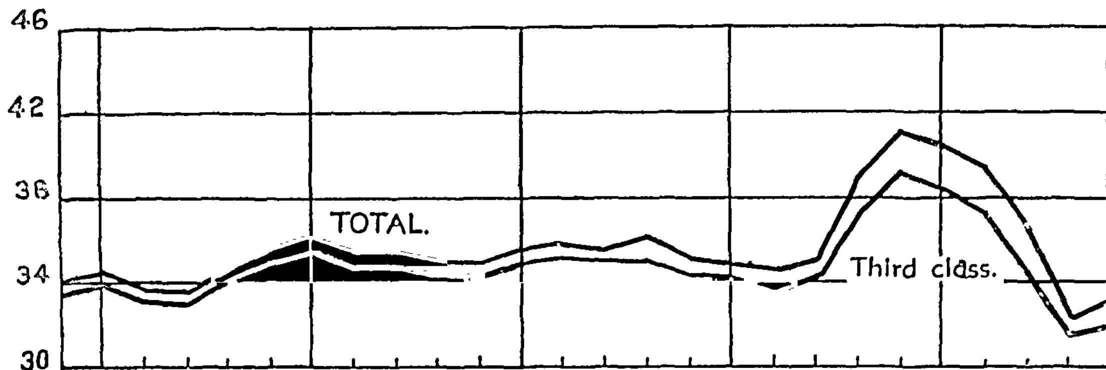
Upper classes

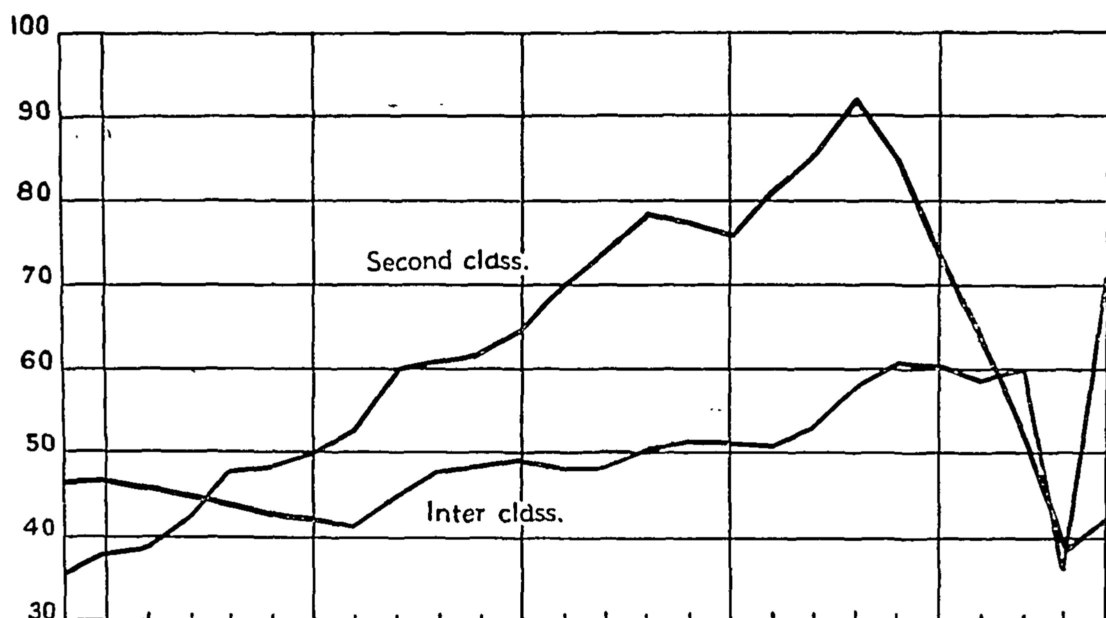


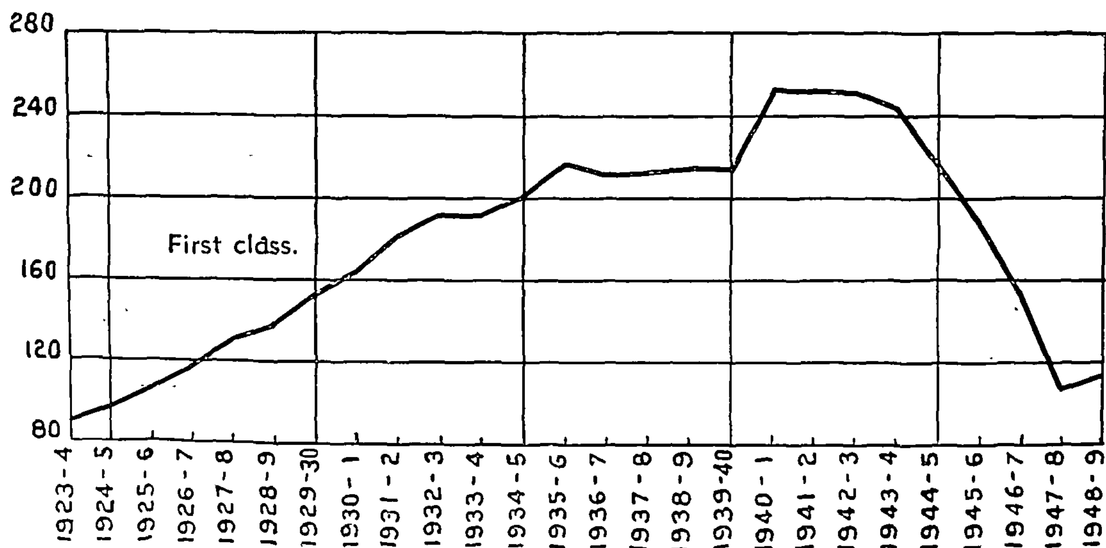
AVERAGE MILES A PASSENGER WAS CARRIED

ALL INDIAN RAILWAYS

(EXCLUDING BURMA RAILWAYS DURING 1923-4 TO 1936-7, N. W. & B. A. RYS. DURING 1-4-47 TO 14-8-47, AND THE PAKISTAN RYS. THEREAFTER.)







NOTE:—

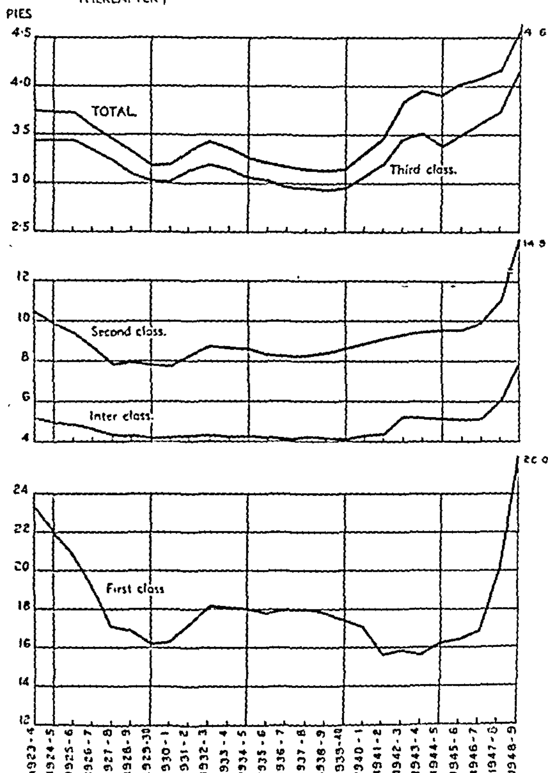
The figures by classes for 9 months up to December 1948 according to the old classes are combined as detailed below with the figures for 1-1-49 as noted below.

First class with air conditioned
Second class with Class I.
Inter class with Class II.
Third class with Class III.

AVERAGE RATE CHARGED PER PASSENGER PER MILE

ALL INDIAN RAILWAYS

(EXCLUDING BURMA RAILWAYS DURING 1923-4 TO 1936-7, N. W G B A RYS DURING 1-4-47 TO 14-8-47, AND THE PAKISTAN RYS THEREAFTER)



NOTE:—

The figures by classes for 9 months up to December 1948 according to the old classes are combined as detailed below with the figures for 1-1-49 as noted below

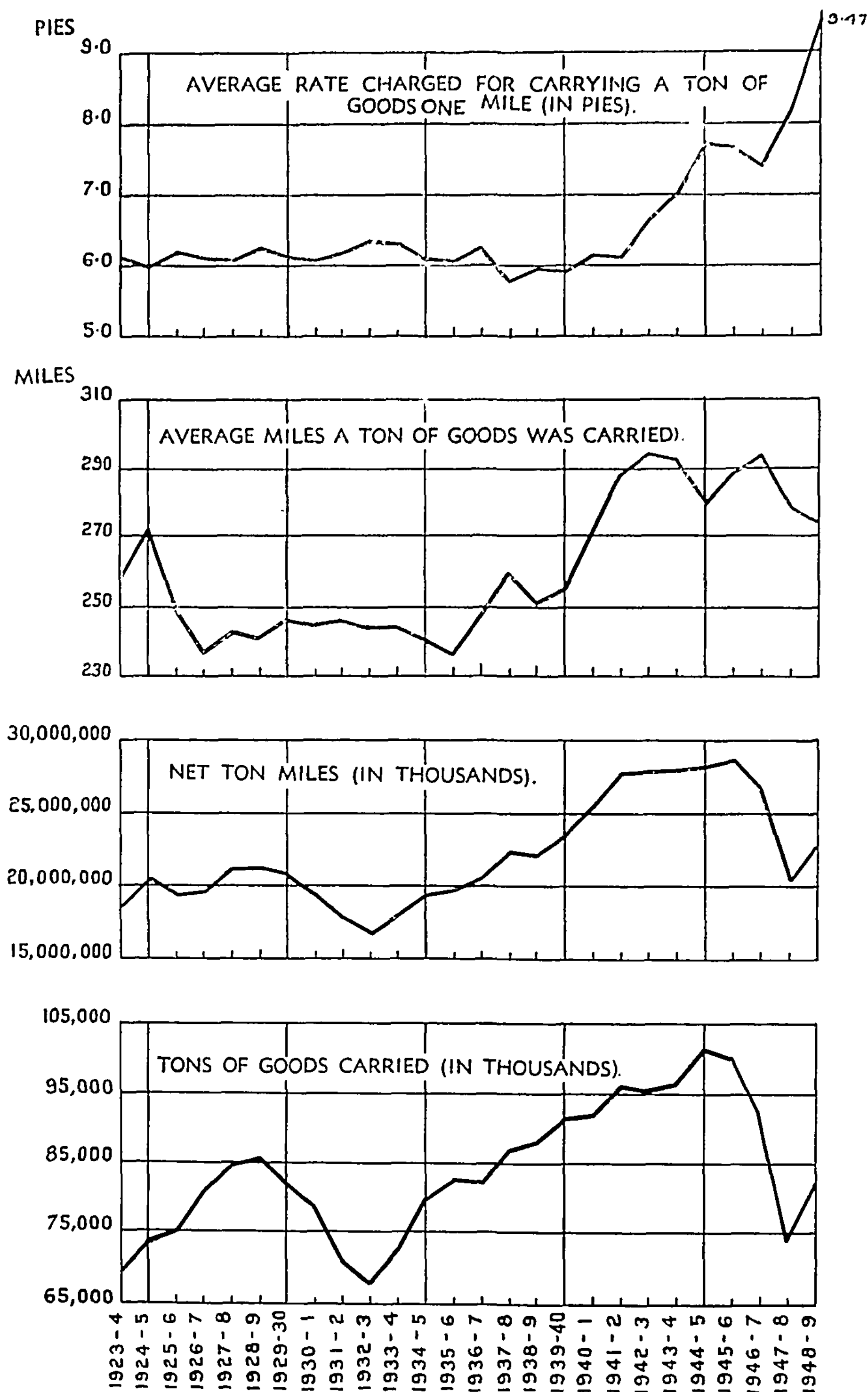
First class with air conditioned — Inter class with Class II

Second class with Class I — Third class with Class III

AVERAGE RATE, AVERAGE LEAD, NET TON MILES, TONS CARRIED

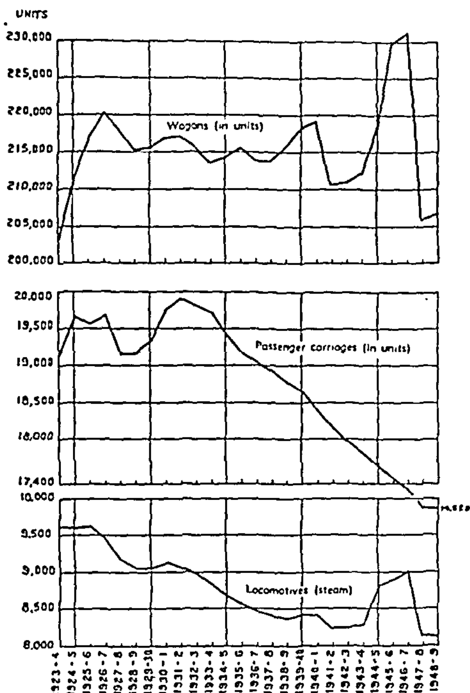
ALL INDIAN RAILWAYS

(EXCLUDING BURMA RAILWAYS DURING 1923-4 TO 1936-7, N. W. & B. A. RYS. DURING 1-4-47 TO 14-8-47, AND THE PAKISTAN RYS. THEREAFTER.)



ROLLING-STOCK IN SERVICE INDIAN RAILWAYS

(EXCLUDING BURMA RAILWAYS DURING 1923-4 TO 1936-7, N. W. & B. A. RYS. DURING 1-4-47 TO 14-8-47, AND THE PAKISTAN RYS. THEREAFTER)



APPENDIX D.

Railway Administrations in India alphabetically arranged by Classes according to their gross earnings showing the working agencies, ownership, and route mileage open on 31 March 1949*.

Indian Railway systems have been classified under three Classes for statistical purposes—
Class I Railways with gross earnings of Rs 50 lakhs and over a year

Class II Railways with gross earnings of less than Rs 50 lakhs a year, but exceeding Rs 10 lakhs a year

Class III Railways with gross earnings of Rs 10 lakhs and under a year

Railway system		Lines comprised in the system			Owned by
Name	Worked by	Name	Gauge	Route mileage	
1	2	3	4	5	6
		Class I Railways			
1 Assam	Indian Govt	(a) Assam . . .	3'-3⅜"	1,131	Indian Government
		(b) Chaparmukh Silghat‡ .	3' 3⅜"	51	Branch Line Company under guarantee terms.
		(c) Katakhal Lalabazar‡ .	3' 3⅜"	24	Ditto.
		(d) Cooch Behar State .	3'-3⅜"	33	Indian State
2 Bengal Nagpur	Indian Govt	(a) *Bengal Nagpur* . .	5'-6"	2,463	Indian Government
		(b) Mayurbhanj . .	2'-6"	71	Branch Lines Company under rebate terms
		(c) Parlakimedi Light .	2'-6"	56	Private body
		(d) Purulia Ranchi . .	2'-6"	117	Indian Government
		(e) Raipur Dhamtari .	2'-6"	55	Ditto
		(f) Satpura . . .	2'-6"	629	Ditto
3 Bikaner State	Indian State	(a) Bikaner State . .	3'-3⅜"	876	Indian State
		(b) Nabha Section of the Sadulpur Rewari Line	3' 3⅜"	7	Ditto
4 Bombay, Baroda & Central India	Indian Govt	(a) Bombay, Baroda & Central India	5'-6"	1,194	Indian Government
		(b) Nagda Ujjain . .	5' 6"	35	Indian State
		(c) Gaekwar's Petlad Cambay (Anand Tarapur Section)	5'-6"	21	Ditto
		(d) Gaekwar's Petlad Cambay (Tarapur Cambay Section)	5'-6"	12	Ditto
		(e) Bombay, Baroda & Central India	3' 3⅜"	1,968	Indian Government
		(f) Palanpur State . .	3' 3⅜"	17	Indian State
		(g) Champaner Shivrajpur Pani Light	2' 6"	31	Indian Government.
		(h) Godhra Lunawada	2' 6"	20	Ditto.
		(i) Nadiad Kapadvanj .	2' 6"	28	Ditto
		(j) Rajpipla State . .	2' 6"	58	Indian State
		(k) Piplod Devgad Baria .	2' 6"	10	Ditto.

* No reclassification of Railways has been made after 1942 though earnings in many cases have exceeded the limits of gross earnings laid down for Class II or Class III railways

‡ This line is guaranteed by the Government of India and also receives a subsidy from the Assam Government

Railway system		Lines comprised in the system			Owned by
Name	Worked by	Name	Gauge	Route mileage	
1	2	3	4	5	6
		Class I Railways—contd.			
5. East Indian	Indian Govt.	(*a*) East Indian . .	5′-6″	4,357	Indian Government.
		(*b*) Kanpur-Barabanki & others	3′-3⅜″	6	Ditto.
		(*c*) Santipur-Nabadwip .	2′-6″	17	Ditto.
6. Eastern Punjab.	Indian Govt.	(*a*) Eastern Punjab . .	5′-6″	1,483	Ditto.
		(*b*) Ludhiana-Dhuri-Jakhal	5′-6″	79	Indian State.
		(*c*) Rajpura-Bhatinda .	5′-6″	108	Ditto.
		(*d*) Jind-Panipat . .	5′-6″	26	Ditto.
		(*e*) Sirhind Rupar . .	5′-6″	31	Ditto.
		(*f*) Rupar-Talaura* . .	5′-6″	34	Indian Government.
		(*g*) Kalka-Simla . .	2′-6″	60	Ditto.
		(*h*) Kangra Valley† . .	2′-6″	68	Ditto.
7. Great Indian Peninsula.	Indian Govt.	(*a*) Great Indian Peninsula	5′-6″	3,085	Ditto.
		(*b*) Bhopal-Itarsi . .	5′-6″	57	Jointly owned by Indian Government & Indian State.
		(*c*) Bhopal-Ujjain . .	5′-6″	115	Indian State.
		(*d*) Bina-Baran . .	5′-6″	147	Ditto.
		(*e*) Dhond-Baramati . .	2′-6″	27	Indian Government.
		(*f*) Ellichpur-Yeotmal .	2′-6″	118	Branch Line Company under rebate terms.
		(*g*) Pachora-Jamner‡ .	2′-6″	35	Ditto.
		(*h*) Pulgaon-Arvi . .	2′-6″	22	Ditto.
		(*i*) Matheran (Hill) Light .	2′-0″	13	Indian Government.
8. Jodhpur .	Indian State.	Jodhpur . . .	3′-3⅜″	807	Indian State.
9. Madras & Southern Mahratta.	Indian Govt.	(*a*) Madras and Southern Mahratta	5′-6″	1,091	Indian Government.
		(*b*) Kolar Gold field (M. S. Railway)	5′-6″	10	Indian State.
		(*c*) Tenali-Repalle . .	5′-6″	21	District Board.
		(*d*) Madras and Southern Mahratta	3′-3⅜″	1,712	Indian Government.
		(*e*) Alnavar-Dandeli (Provincial)	3′-3⅜″	19	Ditto.
		(*f*) Kolhapur State . .	3′-3⅜″	29	Indian State.
		(*g*) Sangli State . .	3′-3⅜″	5	Ditto.
		(*h*) West of India Portuguese	3′-3⅜″	51	Foreign Country.
10. Mysore State.	Indian State	(*a*) Mysore State . .	3′-3⅜″	609	Indian State.
		(*b*) Bangalore-Chik Ballapur Light	2′-6″	39	Ditto.
		(*c*) Kolar District§ . .	2′-6″	64	Ditto.

* Jointly owned by the Government of India and Provincial Government (opened for passenger traffic on 9-10-1948.).

† Guaranteed by Provincial Government.

‡ Since purchased by the Government of India on 1 April 1949.

§ Jointly owned by the Mysore Government and Kolar District Board, and guaranteed by the Mysore Government for the District Board.

Railway system		Lines comprised in the system			Owned by
Name	Worked by	Name	Gauge	Route mileage	
1	2	3	4	5	6
		Class I Railways—concld			
11 Nizam's State	Indian State	(a) Nizam's State*	5'-6"	667	Indian State
		(b) Bezwada Extension	5' 6"	22	Indian Government
		(c) Nizam's State†	3' 3⅜"	671	Indian State
		(d) Dronachellam Kurnool	3' 3⅜"	36	Indian Government.
12. Oudh Tirhut	Indian Govt.	(a) Oudh Tirhut‡	3'-3⅜"	3,088	Ditto
		(b) Singabad (mile 35 1 2) Godagari	3' 3⅜"	35	Foreign Country.
13. South Indian.	Indian Govt	(a) South Indian	5' 6"	550	Indian Government
		(b) Shoranur Cochin	5' 6"	69	Indian State
		(c) Cochin Harbour	5' 6"	4	Unassisted Company.
		(d) South Indian	3' 3⅜"	1,479	*Indian Government.*
		(e) Nilgiri	3'-3⅜"	29	Ditto.
		(f) Peralam Karaikkal	3'-3⅜"	15	Foreign Country
		(g) Pondicherry	3'-3⅜"	8	Ditto
		(h) Tinnevelly-Tiruchendur	3' 3⅜"	38	District Board
		(i) Travancore (Indian Govt Section)	3' 3⅜"	51	Indian Government
		(j) Travancore (Indian State Section) *including* Quilon Trivandrum Central Extension	3'-3⅜"	98	Jointly owned by Indian Govt and Travancore Durbar (Indian State)
		Class II Railways§			
1. Barsi Light.	Barsi Light Rly Co.	Barsi Light	2' 6"	203	Unassisted Company
2. Darjeeling-Himalayan.	Indian Govt.	Darjeeling Himalayan	2'-0"	94	Indian Government.
3. *Gaekwar's Baroda. State.*	*Indian State*	(a) *Gaekwar's Baroda State*	3' 3⅜"	309	*Indian State*
		(b) Gaekwar's Baroda State	2' 6"	403	Ditto.
		(c) Bodeli Chhota Udaipur	2' 6"	23	Ditto
4. Jaipur State.	Indian State	Jaipur State	3' 3⅜"	233	Ditto.
5 Saurashtra	Indian State	(a) Saurashtra	3'-3⅜"	1,097	Ditto
		(b) Okhamandal	3'-3⅜"	37	Ditto
		(c) Saurashtra Railway Tramway	2'-6"	140	Ditto.
6. Shahdara (Delhi)-Saharanpur Light	Shahdara (Delhi) Saharanpur Light Rly Co	Shahdara (Delhi) Saharanpur Light ¶	2'-6"	93	Company subsidized by the Govt of India

* Includes Kazipet-Balharshah, Karepalli-Kothagudium and Vikarabad-Bidar and Extension Branches.

† Comprises of Hingoli Branch, Hyderabad-Godavery Valley, Parbhani-Purli, Secunderabad-Indian Frontier, Jankampet-Bodhan and Mudkhed-Himayatnagar Branches

‡ *Comprises of B & N W. Zone, R & K Zone, Mashrak-Thawe, Tirhut and B A Zone, etc.*

§ Please see footnote '**' on page 101

¶ Receives land only from Government.

Railway system		Lines comprised in the system			Owned by
Name	Worked by	Name	Gauge	Route mileage	
1	2	3	4	5	6
		*Class III Railways.**			
1. Ahmadpur Katwa	Ahmadpur - Katwa Rly. Co.	Ahmadpur-Katwa† . .	2′-6″	32	Branch Line Company under guarantee terms.
2. Arrah Sasaram Light.	Arrah Sasaram Light Rly. Co	Arrah Sasaram Light .	2′-6″	65	Company subsidized by District Board.
3. Bankura Damodar River.	Bankura-Damodar River Rly. Co.	Bankura Damodar River† .	2′-6″	60	Branch Line Company under guarantee terms.
4. Baraset-Basirhat Light	Baraset - Basirhat Light Rly. Co.	Baraset-Basirhat Light .	2′-6″	52	Company subsidized by District Board.
5. Bengal Provincial.	Bengal Provincial Rly. Co.	(a) Bengal Provincial .	2′-6″	33	Unassisted Company.
		(b) Dasghara-Jamalpurganj†	2′-6″	8	Branch Line Company under guarantee terms.
6. Bukhtiarpur-Bihar Light.	Bukhtiarpur-Bihar Light Rly. Co.	Bukhtiarpur-Bihar Light .	2′-6″	33	Company subsidized by District Board.
7. Burdwan Katwa.	Burdwan Katwa Rly. Co	Burdwan Katwa† . .	2′-6″	32	Branch Line Company under guarantee terms
8. Cutch State.	Indian State	Cutch State . . .	2′-6″	72	Indian State.
9. Dehri-Rohtas Light.	Dehri-Rohtas Light Rly. Co.	Dehri-Rohtas Light . .	2′-6″	24	Company subsidized by District Board.
10. Dholpur State.	Indian State	Dholpur State . . .	2′-6″	55	Indian State.
11. Futwah-Islampur.	Futwah - Islampur Light Rly. Co.	Futwah-Islampur† . .	2′-6″	27	Branch Line Company under guarantee terms.
12. Howrah Amta Light.	Howrah-Amta Light Rly. Co.	Howrah-Amta Light .	2′-0″	44	Company subsidized by District Board.
13. Howrah Sheakhala Light.	Howrah-Sheakhala Light Rly. Co.	Howrah-Sheakhala Light .	2′-0″	20	Ditto.
14. Jagadhri Light.	Jagadhri Light Rly. Co.	Jagadhri Light . .	2′-0″	3	Unassisted Company.
15. Kalighat Falta.	Kalighat Falta Rly. Co.	Kalighat-Falta† . .	2′-6″	26	Branch Line Company under guarantee terms.
16. Rajasthan State.	Indian State	Rajasthan State . .	3′-3⅜″	179	Indian State.
17. Scindia State.	Indian State	Scindia State . . .	2′-0″	294	Ditto.
18. Tezpore Balipara Light.	Tezpore Balipara Light Rly. Co.	Tezpore-Balipara Light .	2′-6″	20	Company subsidized by District Board.‡

* Please see footnote ' * ' on page 101.

† Guaranteed by the Government of India.

‡ Subsidy ceased with effect from 1914-5.

Books and Technical Papers published by the Railway Board.

BOOKS

(1) Report by the Railway Board on Indian Railways Published yearly, Price, Volume I—Report, Rs *5-2-0 or 8sh Volume II, Rs 14-0-0 or 22sh. (1947-8).

(2) Classified List of Establishment of Indian Government Railways and Distribution Return of Establishment of all Railways corrected up to 31 December 1948 Price Rs. 11-6-0

(3) History of Indian Railways, constructed and in progress corrected up to 31 March 1945 Published sexennially. Price Rs 9-2-0 or 14sh 6d

TECHNICAL PAPERS.

(4) Over 314 papers have been published by the Technical Section of the Railway Board's Office The papers comprise:—

(a) Original descriptions of railway works and studies of railway problems in India and elsewhere

(b) Reprints of articles from foreign engineering magazines

(c) Reprints or abstracts of reports received by the Government of India on subjects connected with railways

A complete list of the papers can be obtained *gratis* from the Chief Controller, Standardisation, Central Standards Office for Railways, New Delhi A few of the more important Technical papers are mentioned below:—

Technical Paper.	*Name.*	*Author*
No 72	The design of well foundations for bridges	(Compiled)
" 148	Statistics of Railway working expenditure	G DEUCHARS
" 153	River training and control on the guide bank system	F J E. SPRING
" 215.	The Hardinge Bridge over the Lower Ganges at Sara	SIR ROBERT GALES
" 219	Technical education in relation to railways in America	H. L. COLE.
" 239	The Central Control systems for the scheduling of operations in locomotive repairs workshops in England	H H SAUNDERS
" 242	Railway Statistics and the Operating Officer	MAJOR F H BUDDEN
" 243	How to judge the prospects of new railways	LT-COL. L. E HOPKINS
" 244	Sleeper spacing and the effect of the new Permissible Axle-loads	A F HARVEY
" 245	Report of the Indian Railway Bridge Committee on track stresses	
" 247.	1st and 2nd Interim reports of the Indian Railway Bridge Committee on Impact and Revision of the Bridge rules	
" 249	Operating Statistics and the Divisional Officer	MAJOR F H BUDDEN
" 250	Axle-loads, Wheel Diameter and railheads dimensions	
" 251.	A R E. and maintenance of Way Association's Impact tests on Railway Bridges	(Reprinted)
	Description of the planning, Progress, Coaling and Engine Repairs, Schedule System introduced to the G I P Railway Loco Shops at Parel	F G S MARTIN
" 256	Notes on the preparation of railway projects	H L. GLASS.
" 259	The estimation of Passenger earnings on new projects	A LINES.
" 261	Tube wells on the N W Railway, 1925-27	J WARDON
" 262	Note on steps to be taken to permit of running the future large vehicles on Broad Gauge Railways, 1927	A I SLIEGH
" 263	Note on composite Index numbers of Indian Railways	W G BARNETT
" 264	Memorandum on Traffic Surveys	R. N NICOLLS
" 266	Principle of the Absolute Block System, 1929	L. H KIRKNESS.
" 267	Flood Lighting, 1929	H J MULLENEUX
" 271.	Antiseptic treatment of Pinus Longifolia (Chir) for Railway Sleepers	KAMESAM
" 272	The Stereographic Survey of the Shakagam	MAJOR KENNETH MASON (Reprint)
" 273	A Schedule system for the Control of Operations in Workshops, 1929	H H SAUNDERS
" 275	An Enquiry into the Preparation of Periodic Financial Returns on the Railways of Great Britain, Egypt, and Palestine, 1929	MAJOR WAGSTAFF
" 276	Investigation into the Strength of Rail joints	H HOWE AND L. H SWAIN
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" 281	The Belt System of Repairs introduced in the Loco Workshops at Kanchrapara	R DE VERAIRWIN AND J R POTTER
" 282	Note on "Fridera" a composition for reconditioning abraised spike holes in Railway Sleepers	S KRISHNA AND T P GHOSE
" 283	Description of a system introduced in the Stores Department of E I Railway with appendices	F. G S MARTIN AND A R A HARE DUKE

Technical Paper.	Name.	Author.
No. 284.	Notes on progressive system of wagon repairs as introduced in N. W. R. shops at Moghalpura	B S SINDHU.
„ 285.	Notes on the methods by which the provisions in the English Railway Act of 1921 were framed both from the points of view of the Railway Coys. and of Work--the compilers of the Act . .	E. A. SIMS
„ 286.	Stresses in Fishplates for 90 lbs. Rails (with conclusions affecting the design of standard rail and fishplate sections) . . .	A M SIMS
„ 287.	Report on Oil Burners and Wicks for Signal Lamps .	H E COX.
„ 288.	G. I. P. Railway Dynamometer Car, Report No 11, Train Resistance	C W CLARKE
„ 289.	The Hump Yard in India	MAJOR H W WAGSTAFF
„ 290.	The Indian Railway Rates' Structure The case for its simplification. Its existing shortcomings and suggested principles as a basis for its revision	A W BECKETT
„ 291.	Controlled Concrete	A W CRIPS VILLIERS
„ 292.	Hints on the Construction of a Railway in the plains with special reference to Bengal	K B RAY
„ 293.	Simplified Design of Masonry Arch by Elastic Theory .	A VASUDEVAN
„ 294.	Frame Arch Spans for Railway Loadings . .	H I NICHOLAS
„ 295.	The Hallade Track Recorder and Hints on the Maintenance of Curves	(Reprint)
„ 296.	Paint Flaking on Railway Carriages	H M R MORSE
„ 297.	The Maximum Length of Rails as affected by the range of temperature and the design of Rail Joints . . .	A M SIMS
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„ 299.	The determination of the permissible speed on Curves .	E PROCTER
„ 300.	Report on investigation into modern methods of introducing Transition Curves economically into existing lines of Railway .	R H MARTIN
„ 301.	Note on Reconditioning of Curves	R. STRICK
„ 302.	The Coach Painters Handbook and Guide	T VILLIERS
„ 303.	Wear of Rails on curves and check rails clearances required on curves of 4″ and sharper	A. M SIMS
„ 304	Description of the method of Locomotive Repair as carried out in the Kharagpur Workshops of the Bengal Nagpur Railway . .	L G BAILEY
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„ 311.	Diesel Locomotives and Railcars, their development and suitability with special reference to their future in railway traction in India and post-war reconstruction	P R. AGARWAL.
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